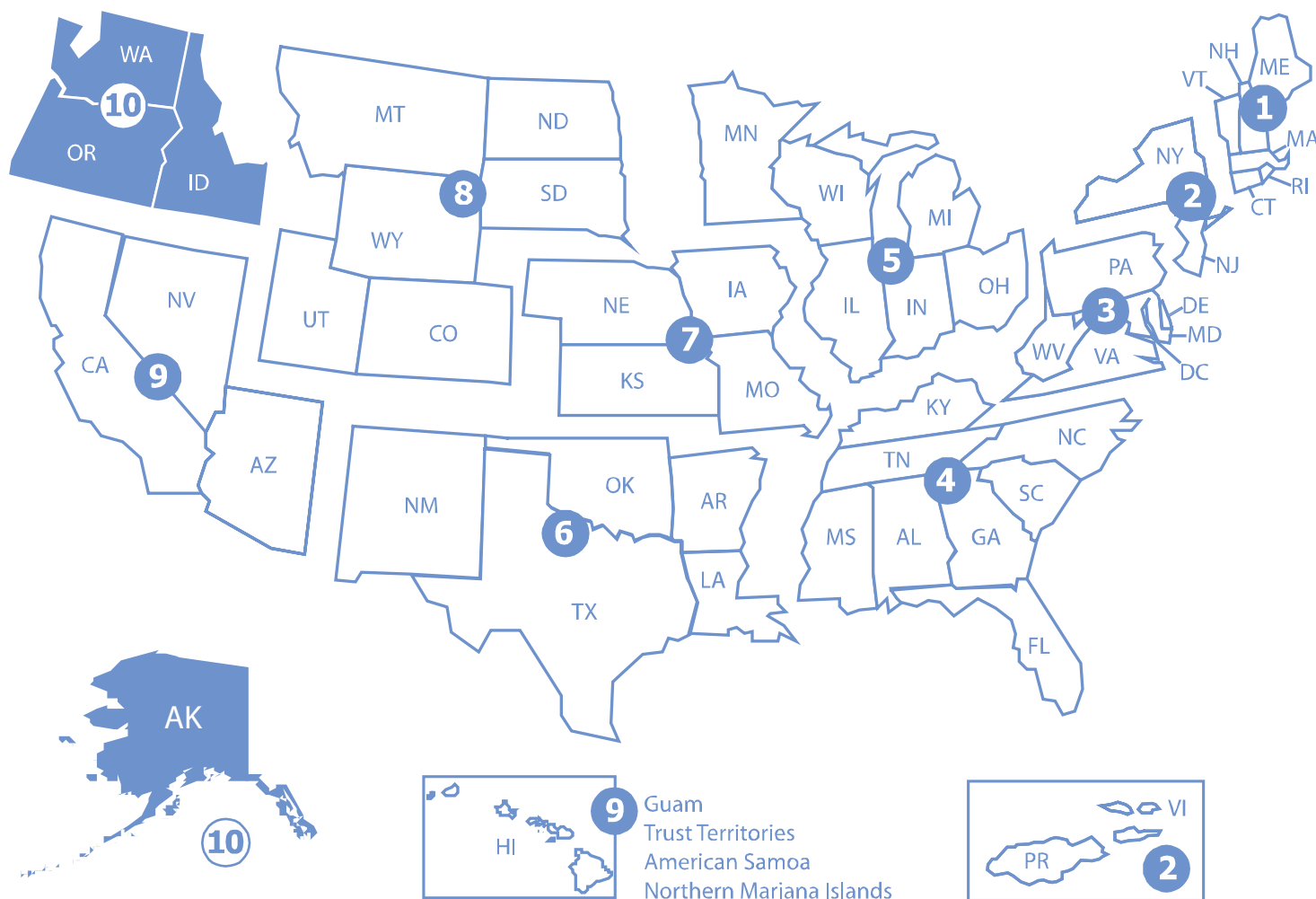




Support Document for the Revised National Priorities List Final Rule – Bremerton Gasworks



**Support Document for the
Revised National Priorities List
Final Rule
Bremerton Gasworks
May 2012**

**Site Assessment and Remedy Decisions Branch
Office of Superfund Remediation and Technology Innovation
Office of Solid Waste and Emergency Response
U.S. Environmental Protection Agency
Washington, DC 20460**

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Executive Summary

Section 105(a)(8)(B) of CERCLA, as amended by SARA, requires that the EPA prepare a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. An original National Priorities List (NPL) was promulgated on September 8, 1983 (48 FR 40658). CERCLA requires that the EPA update the list at least annually.

This document provides responses to public comments received on the Bremerton Gasworks site, proposed on September 16, 2011 (76 FR 57702). This site is being added to the NPL based on an evaluation under the EPA's Hazard Ranking System (HRS) in a final rule published in the *Federal Register* in May 2012.

Introduction

This document explains the rationale for adding the Bremerton Gasworks site in Bremerton, Washington to the National Priorities List (NPL) of uncontrolled hazardous waste sites and also provides the responses to public comments received on this site. The EPA proposed this site on September 16, 2011 (76 FR 57702). This site is being added to the NPL based on an evaluation under the Hazard Ranking System (HRS) in a final rule published in the *Federal Register* in May 2012.

Background of the NPL

In 1980, Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. Sections 9601 *et seq.* in response to the dangers of uncontrolled hazardous waste sites. CERCLA was amended on October 17, 1986, by the Superfund Amendments and Reauthorization Act (SARA), Public Law No. 99-499, stat., 1613 *et seq.* To implement CERCLA, the EPA promulgated the revised National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Part 300, on July 16, 1982 (47 FR 31180), pursuant to CERCLA Section 105 and Executive Order 12316 (46 FR 42237, August 20, 1981). The NCP, further revised by the EPA on September 16, 1985 (50 FR 37624) and November 20, 1985 (50 FR 47912), sets forth guidelines and procedures needed to respond under CERCLA to releases and threatened releases of hazardous substances, pollutants, or contaminants. On March 8, 1990 (55 FR 8666), the EPA further revised the NCP in response to SARA.

Section 105(a)(8)(A) of CERCLA, as amended by SARA, requires that the NCP include

criteria for determining priorities among releases or threatened releases throughout the United States for the purpose of taking remedial action and, to the extent practicable, take into account the potential urgency of such action, for the purpose of taking removal action.

Removal action involves cleanup or other actions that are taken in response to emergency conditions or on a short-term or temporary basis (CERCLA Section 101). Remedial action is generally long-term in nature and involves response actions that are consistent with a permanent remedy for a release (CERCLA Section 101). Criteria for placing sites on the NPL, which makes them eligible for remedial actions financed by the Trust Fund established under CERCLA, were included in the HRS. The EPA promulgated the HRS as Appendix A of the NCP (47 FR 31219, July 16, 1982). On December 14, 1990 (56 FR 51532), the EPA promulgated revisions to the HRS in response to SARA, and established the effective date for the HRS revisions as March 15, 1991.

Section 105(a)(8)(B) of CERCLA, as amended, requires that the statutory criteria provided by the HRS be used to prepare a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States. The list, which is Appendix B of the NCP, is the NPL.

An original NPL of 406 sites was promulgated on September 8, 1983 (48 FR 40658). At that time, an HRS score of 28.50 was established as the cutoff for listing because it yielded an initial NPL of at least 400 sites, as suggested by CERCLA. The NPL has been expanded several times since then, most recently on March 15, 2012 (77 FR 15276). The Agency also has published a number of proposed rulemakings to add sites to the NPL. The most recent proposal was on March 15, 2012 (77 FR 15344).

Development of the NPL

The primary purpose of the NPL is stated in the legislative history of CERCLA (Report of the Committee on Environment and Public Works, Senate Report No. 96-848, 96th Cong., 2d Sess. 60 [1980]).

The priority list serves primarily informational purposes, identifying for the States and the public those facilities and sites or other releases which appear to warrant remedial actions. Inclusion of a facility or site on the list does not in itself reflect a judgment of the activities of its owner or operator, it does not require those persons to undertake any action, nor does it assign liability to any person. Subsequent government actions will be necessary in order to do so, and these actions will be attended by all appropriate procedural safeguards.

The NPL, therefore, is primarily an informational and management tool. The identification of a site for the NPL is intended primarily to guide the EPA in determining which sites warrant further investigation to assess the nature and extent of the human health and environmental risks associated with the site and to determine what CERCLA-financed remedial action(s), if any, may be appropriate. The NPL also serves to notify the public of sites the EPA believes warrant further investigation. Finally, listing a site may, to the extent potentially responsible parties are identifiable at the time of listing, serve as notice to such parties that the Agency may initiate CERCLA-financed remedial action.

CERCLA Section 105(a)(8)(B) directs the EPA to list priority sites among the known releases or threatened release of hazardous substances, pollutants, or contaminants, and Section 105(a)(8)(A) directs the EPA to consider certain enumerated and other appropriate factors in doing so. Thus, as a matter of policy, the EPA has the discretion not to use CERCLA to respond to certain types of releases. Where other authorities exist, placing sites on the NPL for possible remedial action under CERCLA may not be appropriate. Therefore, the EPA has chosen not to place certain types of sites on the NPL even though CERCLA does not exclude such action. If, however, the Agency later determines that sites not listed as a matter of policy are not being properly responded to, the Agency may consider placing them on the NPL.

Hazard Ranking System

The HRS is the principle mechanism the EPA uses to place uncontrolled waste sites on the NPL. It is a numerically based screening system that uses information from initial, limited investigations – the preliminary assessment and site inspection – to assess the relative potential of sites to pose a threat to human health or the environment. HRS scores, however, do not determine the sequence in which the EPA funds remedial response actions, because the information collected to develop HRS scores is not sufficient in itself to determine either the extent of contamination or the appropriate response for a particular site. Moreover, the sites with the highest scores do not necessarily come to the Agency's attention first, so that addressing sites strictly on the basis of ranking would in some cases require stopping work at sites where it was already underway. Thus, the EPA relies on further, more detailed studies in the remedial investigation/feasibility study that typically follows listing.

The HRS uses a structured value analysis approach to scoring sites. This approach assigns numerical values to factors that relate to or indicate risk, based on conditions at the site. The factors are grouped into three categories. Each category has a maximum value. The categories are:

- likelihood that a site has released or has the potential to release hazardous substances into the environment;

- characteristics of the waste (toxicity and waste quantity); and
- people or sensitive environments (targets) affected by the release.

Under the HRS, four pathways can be scored for one or more threats as identified below:

- Ground Water Migration (S_{gw})
 - drinking water
- Surface Water Migration (S_{sw})

The following threats are evaluated for two separate migration components, overland/flood migration and ground water to surface water.

 - drinking water
 - human food chain
 - sensitive environments
- Soil Exposure (S_s)
 - resident population
 - nearby population
 - sensitive environments
- Air Migration (S_a)
 - population
 - sensitive environments

After scores are calculated for one or more pathways according to prescribed guidelines, they are combined using the following root-mean-square equation to determine the overall site score (S), which ranges from 0 to 100:

$$S = \sqrt{\frac{S_{gw}^2 + S_{sw}^2 + S_s^2 + S_a^2}{4}}$$

If all pathway scores are low, the HRS score is low. However, the HRS score can be relatively high even if only one pathway score is high. This is an important requirement for HRS scoring because some extremely dangerous sites pose threats through only one pathway. For example, buried leaking drums of hazardous substances can contaminate drinking water wells, but – if the drums are buried deep enough and the substances not very volatile – not surface water or air.

Other Mechanisms for Listing

There are two mechanisms other than the HRS by which sites can be placed on the NPL. The first of these mechanisms, authorized by the NCP at 40 CFR 300.425(c)(2), allows each State and Territory to designate one site as its highest priority regardless of score. The last mechanism, authorized by the NCP at 40 CFR 300.425(c)(3), allows listing a site if it meets the following three requirements:

- Agency for Toxic Substances and Disease Registry (ATSDR) of the U.S. Public Health Service has issued a health advisory that recommends dissociation of individuals from the release;
- EPA determines the site poses a significant threat to public health; and

- EPA anticipates it will be more cost-effective to use its remedial authority than to use its emergency removal authority to respond to the site.

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Organization of this Document

The following section contains the EPA responses to site-specific public comments received on the proposal of the Bremerton Gasworks site on September 16, 2011 (76 FR 57702). The site discussion begins with a list of commenters, followed by a site description, a summary of comments, and Agency responses to each comment. A concluding statement indicates the effect of the comments on the HRS score for the site.

Glossary

The following acronyms and abbreviations are used throughout the text:

Agency	U.S. Environmental Protection Agency
AST	Above ground storage tank
ATSDR	Agency for Toxic Substances and Disease Registry
Cascade	Cascade Natural Gas Corporation
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C. Sections 9601 <i>et seq.</i> , also known as Superfund
CFR	Code of federal regulations
D.C. Cir	U.S. Court of Appeals for the District of Columbia Circuit
EPA	U.S. Environmental Protection Agency, also USEPA
ESU	Evolutionary Significant Unit
FR	Federal Register
HRS	Hazard Ranking System, Appendix A of the NCP
HRS score	Overall site score calculated using the Hazard Ranking System; ranges from 0 to 100
MGP	Manufactured Gas Plant
NCP	National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300
NPL	National Priorities List, Appendix B of the NCP
OSWER	USEPA's Office of Solid Waste and Emergency Response
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
PPE	Probable point of entry
RA	Removal action
RI	Remedial Investigation
RI/FS	Remedial Investigation/Feasibility Study
SARA	Superfund Amendments and Reauthorization Act
SVOC	Semi-volatile organic compound

TDL	Target distance limit
USCG	U.S. Coast Guard
VOC	Volatile organic compound

1. List of Commenters and Correspondence

EPA-HQ-SFUND-2011-0654-0003	State Concurrence Letter - Bremerton Gasworks (September 2011)
EPA-HQ-SFUND-2011-0654-0005	Comment, dated November 16, 2011, from Heather Trim, Director of Policy, People for Puget Sound
EPA-HQ-SFUND-2011-0654-0006	Comment, dated November 15, 2011, from Howard F. Jensen, Tupper Mack Jensen Wells PLLC on behalf of Steve Kessie, Operations Services Manager, Cascade Natural Gas Corporation
EPA-HQ-SFUND-2011-0654-0007	Comment, dated November 17, 2011, from Leonard Forsman, Chairman, The Suquamish Tribe

2. Site Description

The Bremerton Gasworks site (the Site) as scored in the HRS documentation record at proposal includes contaminant releases discharged from a 12-inch concrete pipe into the intertidal area of the Port Washington Narrows near the former Bremerton Manufactured Gas Plant (MGP) and areas where the contamination has come to be located. The former Bremerton MGP was located on the south shore of the Port Washington Narrows, a navigable waterway that is part of Puget Sound in the state of Washington.

The former Bremerton MGP produced gas for lighting and heating through coal gasification from approximately 1930 to the mid-1950s; and through blending propane and air from the mid-1950s to 1963. Coal gasification was conducted at the Bremerton MGP using carbureted water gas technology. After MGP operations ended, the property was used for industrial purposes including metal fabrication, concrete forming, and boat repair.

In August 2010, intermittent sheens were observed on the surface water of the Port Washington Narrows near the former Bremerton MGP. Further investigation in October 2010 identified the 12-inch concrete pipe to be releasing product that was described as having characteristics similar to coal tar, from the former Bremerton MGP into the mid-intertidal zone of the Port Washington Narrows. In October 2010, the U. S. Coast Guard (USCG) cut off a short section of the end of the pipe and installed a temporary plug in the new pipe end. EPA sampled sediments adjacent to Bremerton Gasworks in a 2008 Targeted Brownfields Assessment and during an Emergency Removal Action in October 2010.

In November 2010, an Incident and Time Critical Removal Action was carried out in response to releases from the pipe. At that time, two samples of material from the concrete pipe were analyzed and documented to contain gasoline-range petroleum hydrocarbons, diesel-range petroleum hydrocarbons, motor oil-range petroleum hydrocarbons, metals, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs) including polycyclic aromatic hydrocarbons (PAHs). The concrete pipe was plugged as close as practicable to the shoreline; all portions of the pipe from this new plug to the pipe terminus (approximately 60 linear feet) were removed; the resulting pipe excavation was backfilled with clean beach material; and an Organo-Clay mat was placed over impacted sediments near the terminus of the pipe.

Observed releases have been documented based on direct observation of the source (the concrete pipe outfall) releasing a black substance and based on chemical analysis of sediment samples collected from the intertidal area of the Port Washington Narrows. Hazardous substances associated with the Site include: naphthalene,

2-Methylnaphthalene, Acenaphthene, Dibenzofuran, Fluorene, Phenanthrene, Anthracene, Carbazole, Fluoranthene, Pyrene, Benz(a)anthracene, Chrysene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenz(a,h)anthracene, and Benzo(g,h,i)perylene.

Targets evaluated for HRS scoring include a fishery and sensitive environments that are both at least partially located within the area of actual contamination at the Site. The sensitive environments include a critical habitat for the federal-listed threatened Puget Sound Evolutionary Significant Unit (ESU) Chinook salmon and the federal-listed threatened Puget Sound ESU Steelhead.

The HRS Site score is based on the release of PAHs to sediments in the intertidal area of the Port Washington Narrows, and the resulting risk to the human food chain fishery and threatened species targets.

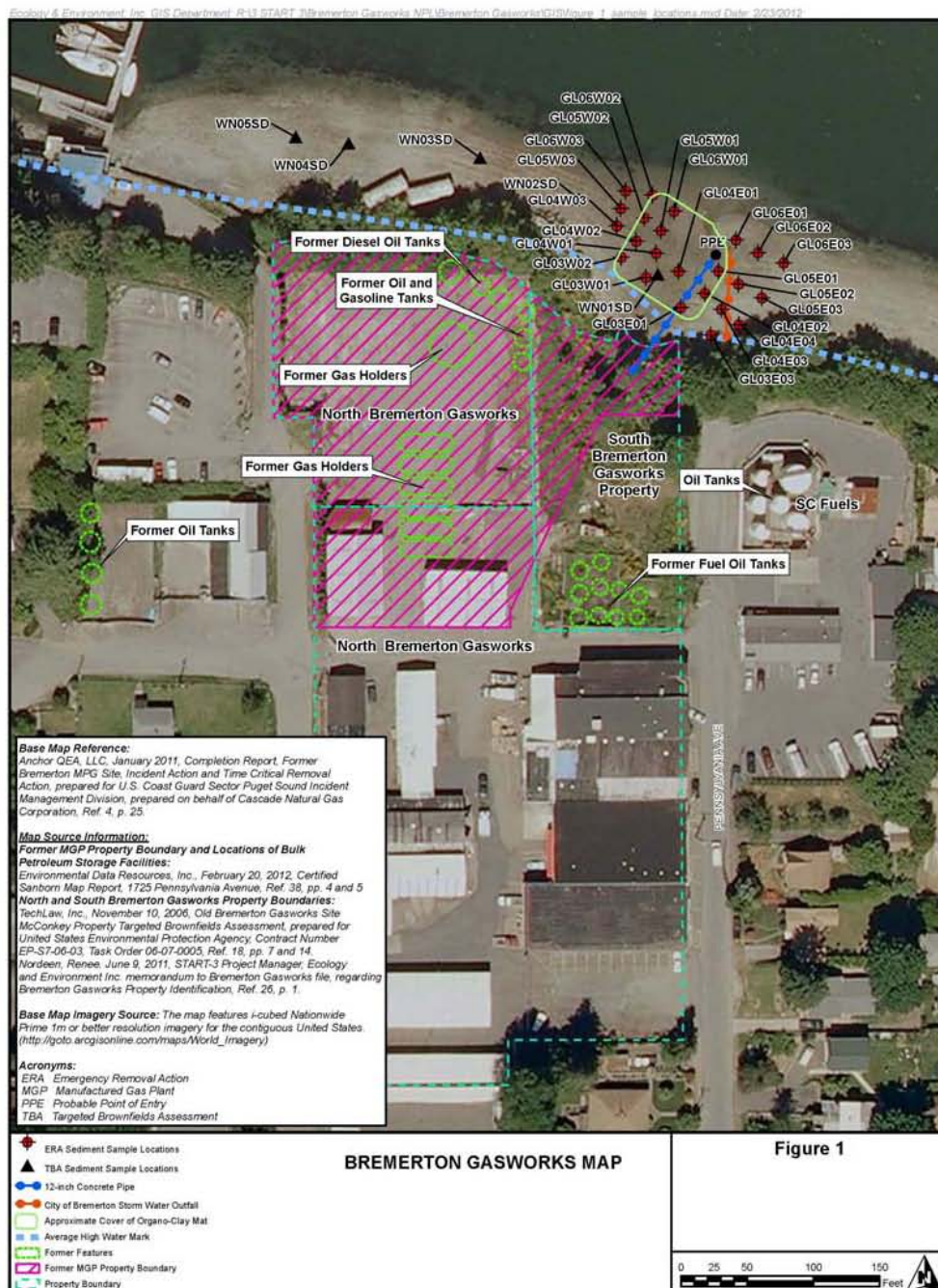


Figure 1 – Map of the Bremerton Gasworks area showing property boundaries, former features, sediment sample locations and the approximate location of the Organo-Clay Mat.

3. Summary of Comments

Three commenters submitted comments in support of placing the Bremerton Gasworks site on the National Priorities List (NPL). The Governor of the State of Washington supported placement of the Site on the NPL and stated that “[p]lacing the site on the National Priorities List is a critical step toward protecting the waters of Puget Sound.” Two other commenters generally supported the cleanup of the Site and the addition of the Site to the National Priorities List (NPL).

One commenter submitted comments in opposition to placing the Site on the NPL. Cascade Natural Gas Corporation (Cascade) submitted comments opposing the listing of the Site; Cascade raised both policy and technical HRS scoring issues regarding site eligibility.

Cascade asserted that the HRS documentation record at proposal incorrectly portrays the previous operations and associated waste streams of the former manufactured gas plant (MGP). Cascade stated that the gasification process that took place in the former MGP operations used “water gas technology,” which the commenter challenged does not give rise to “creosote” or “coal tar” wastes as described throughout the HRS documentation record. The commenter asserted that the HRS evaluation incorrectly associated “coal tar” and/or “creosote” wastes with the source; the commenter asserted such wastes were not associated with the former MGP operations.

Cascade commented that the HRS evaluation incorrectly represents the extent of the Bremerton Gasworks site (the Site), the location of the former MGP operations, and the parcels of real property affected by the former MGP. Cascade stated that the removal action it completed in 2010 was not considered in the HRS evaluation. Cascade asserted that discharges from Source 1 (concrete pipe outfall) were mitigated, yet the HRS evaluation characterizes the release from the pipe as an ongoing issue.

Cascade stated that “the parcel nomenclature adopted by EPA is confusing and misleading,” and encompasses an area much larger than what was formerly occupied by the former MGP. Cascade asserted that the HRS evaluation incorrectly states that the Site encompasses an area of approximately 3.5 acres in size, and that the historical boundary of the former MGP is known.

Cascade stated that the discussion of contamination of upland ground water, as presented in the Site Summary (pg. 7-8 of the HRS documentation record at proposal), is inappropriate, as the ground water migration pathway was not scored as part of the HRS evaluation of the Bremerton Gasworks site. Additionally, Cascade asserted that the ground water data collected during the Targeted Brownfields Assessment (TBA) are flawed for scoring the ground water migration pathway.

Cascade stated that the HRS evaluation “focuses on the concrete pipe in the beach area” and that many other likely sources of contamination exist at the Site. Additionally, Cascade asserted that the discussion of other possible sources on page 15 of the HRS documentation record at proposal incorrectly presents contaminated soil on the Bremerton Gasworks property as an “other possible source,” incorrectly implying that all of the contaminated soil was associated with the former MGP.

Cascade asserted that the removal action was not appropriately accounted for in the HRS evaluation. It challenged the evaluation of the observed releases by direct observation and by chemical analysis at the Site because the concrete pipe and contaminated sediments have been at least partially removed. It also stated that the waste characteristics were inappropriately evaluated because the waste characteristics evaluation overestimated the hazardous waste quantity.

Finally, Cascade raised several concerns regarding the targets scored at the Site. It challenged the establishment of the target distance limit (TDL) and the consideration of all targets within that distance for both the human food chain threat and the environmental threat by questioning whether targets located far away from the scored source

are appropriately eligible for consideration. Cascade also challenged the establishment of the extent of the zone (or area) of actual contamination in surface water used to identify human food chain threat targets. It asserted that the impacts on the human food chain fishery associated with the surface water migration pathway are not well documented and stated that “there are no data confirming that an impact to the food chain or to tribal fisheries has occurred.” Finally, Cascade challenged the eligibility of the scored sensitive environments by asserting that there is no indication that hazardous substances from releases at the Bremerton Gasworks site have impacted any threatened or endangered species.

3.1 Support for Listing and Other Non-opposition Comments

Comment: Christine O. Gregoire, Governor of the State of Washington, supported placement of the Site on the NPL, stating that “[p]lacing the site on the National Priorities List is a critical step toward protecting the waters of Puget Sound.”

Two additional commenters, the People for Puget Sound and the Suquamish Tribe, supported placement of the Site on the NPL. The People for Puget Sound stated that “PAHs [polycyclic aromatic hydrocarbons] are one of the chemicals that is currently showing an increase in sediments in Puget Sound” and that “[a]s we move towards the recovery of Puget Sound’s ecosystem health, it is critical that we address our most polluted sites, especially those like this site in which there is likely movement of contamination via groundwater into marine waters.” The People for Puget Sound commented that they would like to see a thorough cleanup conducted in a timely manner. The Suquamish Tribe expressed an interest in requesting a formal government-to-government meeting with the EPA at a later date.

Response: The Bremerton Gasworks site is being added to the NPL. Listing makes a site eligible for remedial action funding under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the EPA will examine the Site to determine the appropriate response action(s). Actual funding may not necessarily be undertaken in the precise order of HRS scores and upon more detailed investigation may not be necessary at all in some cases. The need for using Superfund monies for remedial activities will be determined on a site-by-site basis, taking into account the NPL ranking, State priorities, further site investigation, other response alternatives, and other factors as appropriate. The EPA will not stop work at some sites to begin work at other higher-scoring sites added to the NPL more recently.

The Agency acknowledges the commenters’ desire for not delaying further remedial actions at this Site. However, considerations regarding remedy selection and implementation are not factors in the decision to list a site on the NPL and these decisions are not made at the listing stage. Therefore, the commenters’ concerns on this topic will be addressed during later stages of the Superfund process, as these activities typically occur after listing. Listing of a site simply informs the public that the EPA has determined that the site poses sufficient threat to human health and the environment to warrant further investigation. It does not predetermine the response actions.

The EPA will coordinate with the Suquamish Tribe and utilize formal consultation if needed. All specific comments received on the proposed addition of the Bremerton Gasworks site to the NPL have been addressed in this support document and the Site qualifies for addition to the NPL.

3.2 Previous MGP Operations

Comment: Cascade Natural Gas Corporation (Cascade) asserted that the HRS documentation record at proposal incorrectly portrays the previous operations of the former manufactured gas plant (MGP). Cascade stated that the gasification process that took place in the former MGP operations used “water gas technology,” which the commenter challenged does not result in “creosote” or “coal tar” wastes as described throughout the HRS documentation record.

Response: The terms used to describe the appearance of the wastes observed at the Site have been revised in the HRS documentation record at promulgation. However, these general terms used to describe the appearance of the waste have no impact on the HRS evaluation; the HRS score is based on the specific hazardous substances, pollutants, and contaminants identified in the waste.

Page 7 of the HRS documentation record at proposal cites the January 2011 Completion Report for the Incident Action and Time Critical Removal Action, prepared by Anchor QEA on behalf of Cascade. This report states that the former MGP “produced gas for lighting and heating through coal gasification from approximately 1930 to the mid-1950s; and through blending propane and air from the mid-1950s to 1963.”

Wastes sampled at the source (concrete pipe outfall) were described as “coal tars” or having other tar-like characteristics; these are general terms applied to the waste, and in no way impact the site score. Although many of these terms have been changed in the HRS documentation record at promulgation, these general descriptive terms that were used are only intended to highlight the nature of the wastes observed at the Site. The commenter agreed that the former MGP did in fact produce wastes, including tar wastes, generated from feedstocks that included coal and coke. Further, the commenter has not submitted documentation to show that wastes generated during the long history of the former MGP operations have a waste profile that is significantly different from the coal tar wastes as described in the HRS documentation record at proposal.

Regarding the use of the term “creosote,” page 29 of the HRS documentation record at proposal clarifies the use of this term. It states that the waste discharging from the concrete pipe was indeed not likely creosote, but “more likely coal tar because many of the compounds detected are associated with coal tar pitch.” As such, the HRS documentation record at proposal did not associate creosote with former MGP operations or with wastes detected at the Site. Regardless, the general terminology of these wastes has been revised in the HRS documentation record at promulgation to more accurately describe the waste found at the Site. However, the HRS score is based on the specific hazardous substances, pollutants, and contaminants that have been identified in the waste and not simply compounds associated with the general terminology used to describe the waste. Refer to section 3.6, Hazardous Substances Associated with the Source, of this support document, for further discussion on how the chemical fingerprints of hazardous substances detected in the source are indicative of coal tar-like wastes.

See section 3.8.2, Observed Release by Direct Observation, of this support document and section 2.2.2, Hazardous Substances Associated with the Source, of the HRS documentation record at proposal regarding the specific substances used in the scoring of the Site.

This comment and the editorial revisions made in the HRS documentation record at promulgation result in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.3 Extent of Site

Comment: Cascade asserted that the HRS evaluation is incorrect in its representation of the extent of the Bremerton Gasworks site, the location of the former MGP operations, and the parcels of real property affected by the former MGP.

Cascade stated that “the parcel nomenclature adopted by EPA is confusing and misleading,” and that the ‘North Bremerton Gasworks’ parcel as described in the HRS documentation record at proposal encompasses an area much larger than what was formerly occupied by the former MGP. Cascade requested that the HRS documentation record be revised to portray that the location of the “plugged end of the concrete pipe” is located just north of the “Sesko Property.”

Additionally, Cascade stated that there is no evidence the former MGP was used for petroleum storage between 1963 and 1985, although several petroleum storage and distribution facilities were located adjacent to the former MGP and were in operation at the time. Cascade asserted that the HRS evaluation incorrectly associates above ground storage tanks (ASTs) and conveyance equipment used for petroleum products with the former MGP, and that these petroleum storage facilities were associated with parcels of property not associated with the former MGP operations.

Cascade stated that available data from upland investigations roughly defines the current extent of contamination potentially related to the former MGP. Cascade asserted that the HRS evaluation incorrectly states that the Site encompasses an area of approximately 3.5 acres in size, and that the historical boundary of the former MGP is known. Cascade stated:

Based on existing data, the upland portion of the Site is about 1.3 acres (i.e., the overall size of the Former Bremerton Gasworks Property) and the sediment portion of the Site is about 1.5 acres (i.e., the sediment area extending from the Former Gasworks Property to the outer harbor line). The total Site area is about 2.8 acres.

Response: The extent of the Bremerton Gasworks site as presented in the HRS documentation record at proposal was correctly defined in accordance with the HRS as the 12-inch concrete pipe (located west of the storm water outfall, see Figure 1 of this support document) and the area in the Port Washington Narrows where the hazardous substances from the discharge of the pipe have come to be located. The Site, for HRS purposes, does not include the upland portions of the property. The discussion of the parcels of real property and facility boundaries do not define the extent of the Site, and the changes proposed by Cascade regarding how the property boundaries are described would not change the way in which the Site is defined and how the elements are scored. Section 3.11, Requested Revisions to the HRS Documentation Record and the NPL Site Narrative, of this support document identifies the editorial changes that will be reflected in the HRS documentation record at promulgation; none of these revisions change the HRS score.

Moreover, the full extent of the Bremerton Gasworks site is not conclusively determined upon NPL listing. Placing a site on the NPL is based on an evaluation, in accordance with the HRS, of a release or threatened release of hazardous substances, pollutants, or contaminants. However, the fact that the EPA initially identifies and lists the release based on a review of contamination at a certain parcel of property does not necessarily mean that the site boundaries are limited to that parcel.

CERCLA Section 105(a)(8)(A) requires the EPA to list national priorities among the known "releases or threatened releases" of hazardous substances; thus, the focus is on the release, not precisely delineated boundaries. Further, CERCLA Section 101(b) defines a "facility" as the "site" where a hazardous substance has been "deposited, stored, placed, or otherwise come to be located." The "come to be located" language gives the EPA broad authority to clean up contamination when it has spread from the original source. On March 31, 1989 (54 FR 13298), the EPA stated:

HRS scoring and the subsequent listing of a release merely represent the initial determination that a certain area may need to be addressed under CERCLA. Accordingly, the EPA contemplates that the preliminary description of facility boundaries at the time of scoring will need to be refined and improved as more information is developed as to where the contamination has come to be located; this refining step generally comes during the RI/FS stage.

The revised HRS (55 FR 51587, December 14, 1990) elaborates on the "come to be located" language, defining "site" as:

area(s) where a hazardous substance has been deposited, stored, disposed, or placed, or has otherwise come to be located. Such areas may include multiple sources, and may include the area between the sources.

Until the site investigation process has been completed and a remedial action (if any) selected, the EPA can neither estimate the extent of contamination at the site, nor describe the ultimate dimensions of the NPL site. Even during a remedial action, such as removing contaminated soils or sediments, the EPA may find that the contamination has spread further than previously estimated, and the site definition may be correspondingly expanded.

This comment and the editorial revisions made in the HRS documentation record at promulgation result in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.4 Discussion of Pathways Not Scored

Comment: Cascade stated that the discussion of contamination of upland ground water, as presented in the Site Summary on pages 7-8 of the HRS documentation record at proposal, is inappropriate, as the ground water migration pathway was not scored as part of the HRS evaluation of the Bremerton Gasworks site. Cascade stated:

This paragraph [referring to the last paragraph of page 7 of the HRS documentation record at proposal], which discusses the condition of upland ground water, is not relevant to the HRS, and should not be included in the site summary. According to HRS guidance, "For HRS purposes, the term site ... refers to the sources of hazardous substances and areas of hazardous substance contamination that *are to be scored* ..." [emphasis in original comment]. This HRS [evaluation] scores only the release of waste into the waterway at the outfall of the former concrete pipe. Ground water contamination in upland areas is hydraulically upgradient of the outfall and is highly unlikely to have originated from the outfall. The ground water contamination is likely from a variety of sources, including potentially the former MGP but also potentially one or more petroleum storage facilities or industrial park operations unrelated to the former MGP.

Additionally, Cascade asserted that the ground water data collected during the Targeted Brownfields Assessment (TBA) are flawed for scoring the ground water migration pathway. It stated:

It is not clear that all of the ground water data collected during the TBA are of sufficient quality to be used in the HRS. For example, a number of ground water samples were not collected from wells and have potentially high bias for contaminants due to turbidity; concentration units appear to have been misreported for metals; and it is not clear that appropriate screening levels were used. We suggest removing this paragraph from the HRS.

Response: Although the ground water migration pathway was not scored in the HRS evaluation of the Bremerton Gasworks site, the threat of contamination from this or other pathways is relevant to discuss in the HRS documentation record at proposal because contamination via the ground water migration or other pathways not scored in the HRS evaluation may be evaluated at other stages of the Superfund process.

The HRS does not require scoring all four pathways, if scoring those pathways does not change the listing decision. For some sites, data for scoring a pathway are unavailable, and obtaining these data would be time-consuming or costly. In other cases, data for scoring some pathways are available, but would only have a minimal effect on the site score. In still other cases, data on other pathways could substantially add to a site score, but would not affect the listing decision. The HRS is a screening model that uses limited resources to determine whether a site should be placed on the NPL for possible Superfund response. A subsequent stage of the Superfund

process, the Remedial Investigation (RI), characterizes conditions and hazards at the site more comprehensively and could potentially evaluate pathways not scored in the HRS evaluation.

The HRS is intended to be a "rough list" of prioritized hazardous sites; a "first step in a process--nothing more, nothing less" (*Eagle Picher Indus. v. EPA*, 759 F.2d 922, 932 (D.C. Cir. 1985) (*Eagle Picher II*). The EPA would like to investigate each possible site completely and thoroughly prior to evaluating them for proposal for NPL, but it must reconcile the need for certainty before action with the need for inexpensive, expeditious procedures to identify potentially hazardous sites. The courts have found the EPA's approach to solving this conundrum to be "reasonable and fully in accord with Congressional intent." (759 F.2d 905 (D.C. Cir. 1985))

As such, the HRS evaluation will generally not score additional pathways upon receiving new data as long as the site still meets the HRS cutoff score. However, any additional data characterizing site conditions could provide useful information during the RI, as was presented in the Site Summary of the HRS documentation record at proposal for this site.

At this site, it was relevant to discuss the potential threat associated with ground water contamination, as this information may be pertinent during the RI stage of the Superfund process. In fact, Cascade specifically expressed concern that historical MGP operations in the upland portion in the vicinity of the Site are potentially an area of contamination.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.5 Consideration of Removal Action

Comment: Cascade stated that the removal action it completed in 2010 was not considered in the HRS evaluation. It asserted that discharges from Source 1 (concrete pipe outfall) were mitigated, yet the HRS evaluation characterizes the release from the pipe as a continuing issue.

Response: The removal action that took place at the scored source was both acknowledged and appropriately considered in the site scoring in accordance with the HRS, as presented in the HRS documentation record at proposal. The contamination discharged from the pipe that was not addressed by the removal action, is the basis for the HRS evaluation. Additionally, part of the removal action, the placement of the Organo-Clay mat, was only intended as a *temporary* fix, not a permanent remedy, to mitigate the release of hazardous substances in the sediments immediately surrounding Source 1, the concrete pipe outfall, to the Port Washington Narrows.

The EPA generally considers removal actions in scoring a site only when the Agency "has documentation that clearly demonstrates there is no remaining release or potential for a release that could cause adverse environmental or human health impacts."¹ This approach insures that the risk posed by released hazardous substances not abated by the removal action can be properly evaluated by the EPA. As described below, Cascade has not provided the appropriate supporting documentation that all remaining releases have been abated, nor has Cascade provided sufficient reasons to deviate from this approach for considering removal actions in the HRS.

In describing the scored source, page 11 of the HRS documentation record at proposal discusses the removal action that took place and how this removal action was associated with the source.

As a component of the November 2010 RA, the concrete pipe was plugged as close as practicable to the shoreline, all portions of the pipe from this new plug to the pipe terminus were removed,

¹ This position is consistent with OSWER Directive #9345.1-25, April 4, 1997, titled "Revision to OSWER NPL Policy 'The Revised Hazard Ranking System: Evaluating Sites After Waste Removals' Publication No. 9345.1-03FS, October 1991."

the resulting pipe excavation was backfilled with clean beach material, and an Organo-Clay mat was placed over impacted sediments near the terminus of the pipe (Ref. 4, p. 8).

The HRS documentation record at proposal on page 7 states that the removal action was insufficient to completely address the extent of contamination at the Site:

During the October 2010 EPA ERA [Emergency Removal Action], a total of 31 sediment samples were collected from Port Washington Narrows (Ref. 5, p. 1). . . . Additionally, it was determined that the extent and complexity of contamination at Bremerton Gasworks was too extensive to handle within either the Brownfields program or the CERCLA removal program; therefore, Bremerton Gasworks is being proposed for listing on the NPL (Ref. 31, p. 1).

The Organo-Clay mat “placed over impacted sediments near the terminus of the pipe” does not cover all of the contaminated sediments; the sediments surrounding the mat that have not been addressed contain contamination that poses a threat to the human food chain and sensitive environments (see section 3.10, Targets, of this support document regarding the evaluation of the fishery and sensitive environments). Additionally, because the Organo-Clay mat was only a temporary fix, the sediments underneath the mat can be considered for HRS scoring because this temporary action has not demonstrated that there is no potential for a release from the sediments underlying the mat that would cause adverse environmental impacts.

Because the quantity of hazardous waste released from the source is unknown and contaminated sediments remain, it is not appropriate to consider the removal action in the HRS evaluation. (See section 3.8.1, Likelihood of Release – Effect of Removal, and section 3.9.2, Waste Characteristics – Effect of Removal, of this support document for further discussion on the effect of the removal on the site scoring). Thus, the removal action that took place was appropriately considered in the scoring of the Site.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.6 Hazardous Substances Associated with the Source and Available to the Pathway

Comment: Cascade stated that the description of hazardous substances associated with the source and available to the pathway was flawed. The commenter asserted that the HRS evaluation incorrectly associated “coal tar” and/or “creosote” wastes with the source, which Cascade asserted were not associated with the former MGP operations.

Response: Hazardous substances were appropriately associated with the source and considered available to the surface water pathway in accordance with the HRS. The discussion of “coal tar” in various forms as mentioned in the HRS documentation record at proposal simply reflects statements made by on-site personnel regarding their visual observations of the wastes associated with Source 1.

The HRS defines *source* in part as “[a]ny area where a hazardous substance has been deposited, stored, disposed, or placed, plus those soils that have become contaminated from migration of a hazardous substance.”

HRS Section 2.2.2, *Identify hazardous substances associated with a source*, states in part:

For each of the three migration pathways, consider those hazardous substances documented in a source (for example, **by sampling**, labels, manifests, oral or written statements) to be associated with that source when evaluating each pathway. [Emphasis added]

HRS Section 2.2.3, *Identify hazardous substances available to a pathway*, states how to evaluate each migration pathway as far as which hazardous substances should be considered available to migrate from the sources at the site to the pathway. HRS Section 2.2.3 states that:

...

- Surface water migration—overland/flood component.
 - Hazardous substances that meet the criteria for an observed release to surface water in the watershed being evaluated.
 - All hazardous substances associated with a source with a surface water containment factor value greater than 0 for the watershed (see sections 4.1.2.1.2.1.1 and 4.1.2.1.2.2.1).

As detailed in this support document, the scored source at the Site was documented through sampling and analysis to contain hazardous substances.

The HRS documentation record at proposal on pages 10-11 explains that samples collected from the source (concrete pipe outfall) were analyzed for the presence of hazardous substances spanning a range of volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). It states:

In November 2010, an Incident Action and Time Critical Removal Action (RA) was carried out in response to releases from the pipe (Ref. 4, pp. 1, 8, 256). During this removal action, two samples of material in the pipe were collected on November 6, 2010: sample PIPE-40-110610 and PIPE-80-110610 (Ref. 4, pp. 13, 14, and 362). Material in the pipe is shown in a photograph taken during the removal action (Ref. 4, p. 282). The samples were analyzed for TPH as gasoline using method NWTPH-Gx, TPH as diesel and motor oil using method NWTPH-Dx, total metals by EPA Method 200.8, total mercury using EPA Method 1631.E, VOCs using EPA Method 8260C, and SVOCs using EPA Method 8270D (Ref. 4, pp. 321, 322, 323, 324, 326, 328, 329, 331, 332, 336, and 338). Analytical results from these samples indicate the presence of gasoline, diesel, motor oil, metals, VOCs, and SVOCs (pp. 321, 322, 323, 324, 326, 328, 329, 331, 332, 336, and 338). Samples were collected under chain-of-custody procedures (Ref. 4, p. 362).

Table 1 in section 2.2.2 of the HRS documentation record at proposal lists detected concentrations of hazardous substances that were present in the material within the concrete pipe source; these hazardous substances include benzo(a)pyrene, Benzo(a)anthracene, 2-methylnaphthalene, acenaphthene, chrysene, fluoranthene, and pyrene. Table 3 in section 4.1.2.1.1 of the HRS documentation record at proposal shows that these hazardous substances are also currently present in the sediment surrounding Source 1 with a containment value of greater than 0, making the hazardous substances available to the surface water pathway. Section 3.8.1, *Likelihood of Release – Effect of Removal*, of this support document addresses the removal action and the presence of hazardous substances remaining in the sediment at the Site.

In describing the site source, the HRS documentation record at proposal presents information that explains the nature of the hazardous substances associated with the source samples. It states on page 10:

The pipe was determined to be releasing coal tar waste from the MGP into the mid-intertidal zone of a navigable waterway (Ref. 4, p. 256). The sample results indicated the primary constituents detected in all samples were polycyclic aromatic hydrocarbons (PAHs) with lesser amounts of lighter aromatic hydrocarbons such as benzene, toluene, ethylbenzene, and xylenes (BTEX). The **chemical fingerprint is consistent with a coal tar product** (Ref. 4, p. 17). The analytes associated with coal tar pitch (a residue produced during the distillation of coal tar) include PAHs such as naphthalene, 2-methylnaphthylene, acenaphthene, dibenzofurans, fluorene, phenanthrene,

anthracene, carbazole, fluoranthene, pyrene, benzo(g,h,i)perylene, benz(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, and dibenz(a,h)anthracene among others (Ref. 11, pp. 220, 225 – 228). [emphasis added]

The general terminology has been revised in the HRS documentation record at promulgation; however, the term “coal tar” that was used in the HRS documentation record at proposal in discussing the nature of the hazardous substances detected in the source is appropriate. (See section 3.2, Previous MGP Operations, of this support document for further explanation of the wording changes and section 2.2.2, Hazardous Substances Associated with the Source, of the HRS documentation record at proposal regarding the general terminology and the specific substances used in the scoring of the Site.)

High concentrations of PAHs and lower concentrations of lighter hydrocarbons were detected in the source samples; this is indicative of a non-petroleum material origin which was useful in describing the nature of the contamination. As discussed on page 17 in Reference 4, *Completion Report, Former Bremerton MPG Site, Incident Action and Time Critical Removal Action*, January 2011, of the HRS documentation record at proposal, a laboratory chemist associated with the analysis of the data noted that although petroleum-range hydrocarbons were detected in the samples, the “chromatograms were more consistent with a coal tar or creosote product than a petroleum product.” Although creosote is mentioned in this reference and in other references, page 29 of the HRS documentation record at proposal clarifies that the hazardous substances associated with the source are more likely associated with coal tar due to the chemical fingerprint analysis (section 3.2, Previous MGP Operations, of this support document also discusses the clarification of the term “creosote” in the HRS documentation record at proposal).

Regardless, the hazardous substances associated with Source 1, determined through sampling and analysis, were appropriately identified in the HRS documentation record at proposal; the commenter did not challenge the identification of hazardous substances.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.7 Other Possible Sources

Comment: Cascade stated that the HRS evaluation “focuses on the concrete pipe in the beach area,” and that many other likely sources of contamination exist at the Site, including:

- Historical MGP operations in the aquatic portion of the Site, including the former dock structure in the northwestern portion of the Site.
- Historical MGP operations in the upland portion of the Site.
- Historical placement by various parties of potentially impacted fill and other materials within the ravine in the northeastern portion of the Site.
- Presence of creosote-treated pilings and other structures in aquatic areas of the Site, many of which had no connection to the former MGP.
- Operation of fuel pipelines and fuel docks by various parties within and in the vicinity of the Site.
- Historical stormwater or wastewater discharges to Port Washington Narrows, including potential discharges through the concrete pipe that is the subject of the HRS.
- Other industrial uses of the Site, including re-grading or disturbance of the Site after termination of MGP operations.

Additionally, Cascade asserted that the discussion of other possible sources on page 15 of the HRS documentation record at proposal incorrectly presents contaminated soil on the Bremerton Gasworks property as an “other possible source” and asserted that this statement incorrectly implies that all of the contaminated soil was associated with the former MGP. Cascade stated:

It would be more accurate to identify and discuss only the three borings (and their associated data) located on the Former Bremerton Gasworks Property (MPO 1, MP04, SPO 1) and not the borings located on surrounding properties. Otherwise, the discussion implies all of the data are associated with the former MGP, which is incorrect.

Cascade stated that if a discussion of borings not located on the Former Bremerton Gasworks Property is included in the HRS evaluation, the HRS documentation record discussion of contaminated soil should detail that some of the borings were taken on or west of the “North McConkey Property.”

Response: The HRS documentation record at proposal sufficiently identifies other possible sources of contamination at the Site while correctly identifying the concrete pipe outfall as a source.

HRS Section 1.1, *Definitions*, defines “source”, in part, as:

Any area where a hazardous substance has been deposited, stored, disposed, or placed, plus those soils that have become contaminated from migration of a hazardous substance.

HRS Section 2.2.1, *Identify sources*, states, “[f]or the three migration pathways, identify the sources at the site that contain hazardous substances. Identify the migration pathway(s) to which each source applies.” Further, HRS Section 2.2.2, *Identify hazardous substances associated with a source*, states in part

For each of the three migration pathways, consider those hazardous substances documented in a source (for example, by sampling, labels, manifests, oral or written statements) to be associated with that source when evaluating each pathway.

The HRS documentation record at proposal presents a discussion on page 15 of other possible on-site source areas that were sampled at the Site and were determined to contain hazardous substances. The discussion of these other possible sources in the HRS documentation record does not identify that the EPA considers these other possible on-site sources to have contributed to the release of hazardous substances to the surface water migration pathway. Further, the HRS documentation record establishes observed releases by direct observation and by chemical analysis, demonstrating that the release of contaminants from the concrete pipe prior to removal has contaminated nearby sediments that remain at the Site and that the contamination found in the nearby sediments is due, at least in part, to the concrete pipe outfall (Source 1). While other sources may be evaluated during further investigations at the Site, the HRS documentation record at proposal has correctly identified the concrete pipe outfall as the site source.

The discussion of the contaminated soil at the Bremerton Gasworks property in the HRS documentation record only identifies that the EPA may further investigate these other possible sources during the Remedial Investigation for the Site and, if possible, determine whether releases from these other possible sources pose a sufficient risk that warrant remediation. Although there is a potential soil source identified and discussed in the HRS documentation record at proposal, it does not mean that it is the only other possible source that subsequent stages of the Superfund process will take into account as more data is obtained. The other possible sources identified by the commenter (such as the creosote pilings, fuel docks in the area, petroleum conveyance equipment, etc.) may indeed be associated with site-related hazardous substances and be further investigated in a separate stage of the Superfund process, however their impact on the surface water migration pathway is not currently known nor sufficiently documented and thus not included in the site scoring.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.8 Likelihood of Release

Cascade raised several issues regarding whether the likelihood of release was appropriately evaluated as presented in the HRS documentation record at proposal. The following subsections address the commenter's specific issues regarding the likelihood of release evaluated at the Site:

- 3.8.1 Likelihood of Release – Effect of Removal
- 3.8.2 Observed Release by Direct Observation
- 3.8.3 Observed Release by Chemical Analysis
 - 3.8.3.1 Observed Release by Chemical Analysis – Significant Increase
 - 3.8.3.2 Observed Release by Chemical Analysis - Attribution

3.8.1 Likelihood of Release – Effect of Removal

Comment: Cascade asserted that the likelihood of release was inappropriately evaluated and commented that the removal action was not properly considered in the HRS evaluation. It stated that at least some of the discharge has been partially contained.

Response: The Likelihood of release discussion in the HRS documentation record at proposal appropriately considered the removal action and was correctly scored in accordance with the HRS. The removal action did not remove all the hazardous substances released into the environment and was appropriately evaluated in the HRS documentation record at proposal. The likelihood of release discussion evaluates the contamination in the concrete pipe as well as those contaminants that were released from the pipe into the Port Washington Narrows. Because the removal action (which included removing the pipe itself and the placement of an Organo-Clay mat over part of the area contaminated by the discharge; see section 3.5, Consideration of Removal Action, of this support document) has not addressed all of the contamination released from the concrete pipe, and the Organo-Clay mat is a temporary action, the likelihood of release was correctly evaluated. The released substances continue to pose a threat to the human food chain fishery and sensitive environments in the Port Washington Narrows.

HRS Section 4.1.2.1.1, *Observed release*, of the Surface water pathway contains the instructions used to score the likelihood of release to surface water at this site. It states:

Establish an observed release to surface water for a watershed by demonstrating that the site has released a hazardous substance to the surface water in the watershed.

This HRS section also identifies that observed releases can be established by direct observation and by chemical analysis, and that the likelihood of release category value is assigned a 550 if either type of observed release has occurred. As discussed in sections 3.8.2, Observed Release by Direct Observation, and 3.8.3, Observed Release by Chemical Analysis, of this support document, observed releases by both direct observation and chemical analysis were established at the Site based on the discharge of several hazardous substances from a concrete pipe to the Port Washington Narrows, meeting the HRS requirements for scoring the Likelihood of release to the Site.

The HRS documentation record at proposal discusses the extent of the removal action. On page 11, it states:

As a component of the November 2010 RA, the concrete pipe was plugged as close as practicable to the shoreline, all portions of the pipe from this new plug to the pipe terminus were removed, the resulting pipe excavation was backfilled with clean beach material, and an Organo-Clay mat was placed over impacted sediments near the terminus of the pipe (Ref. 4, p. 8).

Page 17 of the HRS documentation record at proposal discussed that samples collected outside of the removal area used in the establishment of the observed release were utilized in the evaluation of the observed releases at the Site (see Figure 1 of this support document). It states:

During the October 2010 EPA ERA, sediment samples were collected around the exposed concrete pipe (i.e., Source 1) (Ref. 5, p. 1). The samples collected to document an observed release were generally **collected outside of the removal area** (see Figure 1). Samples were collected during the October 2010 EPA ERA from the sediment around the pipe on October 9, 2010 and October 10, 2010 (Ref. 5, p. 1) . . . [Emphasis added]

The removal action completed in the vicinity of the concrete pipe outfall source did not completely remove the hazardous substances that have been released from the source, and contaminated sediments remain at the Site (see sample locations in Figure 1 of this support document). Although the Organo-Clay mat is a temporary remedy, the hazardous substances found in the sediment samples underneath the mat are considered available to the pathway. Even if the placement of the mat over contaminated sediments was a permanent remedy, those samples collected outside of mat area were shown to contain hazardous substances available to the pathway and at sufficient contaminant concentrations to identify an observed release by chemical analysis. Specifically, samples GL04W03, GL05W03, and GL06W03 (see Figure 1 of this support document and figure 1 attached to Cascade's submitted comments) are located outside of the Organo-Clay mat that was installed during the removal actions and contain benzo(a)anthracene, benzo(a)pyrene and other hazardous substances above background concentrations.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.8.2 Observed Release by Direct Observation

Comment: In its comments questioning the consideration of the removal action that took place at the Site, Cascade challenged the evaluation of the observed release by direct observation because it considers the observed release by direct observation to have been at least partially addressed by the removal action.

Response: The observed release by direct observation was appropriately established in accordance with the HRS. The direct observation was observed prior to the removal of the pipe and the pursuant removal action did not address **all** of the released contaminants.

The HRS directs the scorer to establish an observed release to surface water by demonstrating that the site has released a hazardous substance to the surface water in the watershed.

HRS Section 4.1.2.1.1, *Observed release*, contains the requirements for establishing an observed release by direct observation and states:

Establish an observed release to surface water for a watershed by demonstrating that the site has released a hazardous substance to the surface water in the watershed. Base this demonstration on either:

- Direct observation:
 - A material that contains one or more hazardous substances has been seen entering surface water through migration or is known to have entered surface water through direct deposition, or

- A source area has been flooded at a time that hazardous substances were present, and one or more hazardous substances were in contact with the flood waters, or .
...

The HRS documentation record at proposal presents information documenting that hazardous substances were observed entering the surface water migration pathway. Page 17 of the HRS documentation record at proposal states:

On August 20, 2010, the KCHD observed intermittent sheens on the surface water of Port Washington Narrows near the former MGP (Ref. 4, p. 7). Further investigation by KCHD on October 4, 2010, identified a 12-inch concrete pipe in the intertidal area that appeared to be discharging product to the marine waters of Port Washington Narrows (Ref. 4, pp. 7 and 25). The pipe was likely an abandoned storm drain or combined sewer outfall that was once connected to or may still be connected to an abandoned vault on the South Bremerton Gasworks Property (Ref. 4, p. 10; Ref. 26, p. 1). Photographs of the staked pipe location demonstrate that it extended into the water (Ref. 4, p. 296). Material in the pipe is also depicted in a photograph and appears as a black substance (Ref. 4, p. 282). Visible black oily contamination at the beach surface appeared to cover approximately 100 square feet of visible beach surface, starting approximately 60 feet below the high tide mark (Ref. 13, p. 2). Visible contamination extended to an unknown depth of soil (but at least two feet below ground surface in places) and continued out into the water below the low tide line (Ref. 13, p. 2). Two samples of the material in the concrete pipe contained several hazardous substances including naphthalene, 2-methylnaphthalene, acenaphthene, anthracene, benz(a)anthracene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, benzo(a)pyrene, carbazole, chrysene, dibenz(a,h)anthracene, dibenzofuran, fluorene, fluoranthene, phenanthrene, and pyrene (see Section 2.2, Source 1). The majority of these same hazardous substances were also detected in sediments near the pipe (see chemical analysis tables below). These analytes are components of coal tar pitch (Ref. 11, pp. 225 – 228).

Additionally, page 1 of Reference 36 of the HRS documentation record at proposal details an email communication by the EPA Region 10 personnel, in which observations of the concrete pipe discharging material are summarized:

On Monday, I received a call from Grant Holdcroft of the Kitsap County Health Department. He had received several calls about sheens in the Port Washington Narrows in the vicinity of the Bremerton Gasworks site. He went to the site Monday 10/4/2010 and after digging in the sediments discovered a pipe that contained **an oily smelly substance that resembled coal tar. He took a sample, had it analyzed and found it contained PAHs commonly found in coal tar.** Grant called Ecology, who recommended he contact "the Feds". He then called me. After our conversation, I spoke to Kathy Parker, the OSC on our SAM/OSC rotation list. She went out to the site on Tuesday.

Tuesday morning Kathy met with Grant and Richard Bazzel at low tide and **saw the open pipe with water and dark brown oily substances streaming out of it, saturating the surrounding sediment.** They took two product samples and Kathy asked the EPA R10 lab to analyze one of the samples for PAHs. The preliminary results showed that the CERCLA residential soil action level was exceeded for 5 PAHs and the industrial action level for one PAH. Kathy contacted the USCG and while they were deciding whether it was their jurisdiction, she had ERRS place boom around the spill area. [emphasis added]

Thus, as waste sampled from the source (concrete pipe outfall) was found to contain hazardous substances and was seen and documented as entering the surface water migration pathway, as "material that contains one or more

hazardous substances has been seen entering surface water through migration or is known to have entered surface water through direct deposition.” Therefore, the observed release by direct observation was appropriately established in accordance with the HRS. While the removal action did prevent more releases from the pipe from occurring, it did not permanently address those released hazardous substances that had previously been discharged and the Site continues to pose a threat.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.8.3 Observed Release by Chemical Analysis

Comment: Cascade questioned the removal action that took place at the Site, and challenged the evaluation of the observed release by chemical analysis.

Response: The observed release by chemical analysis was appropriately established in accordance with the HRS because a release occurred prior to the removal action and the observed release sample locations were either not addressed by the removal action or addressed with a temporary Organo-Clay mat and contamination in the surrounding sediments is not contained. Thus the removal action fails to demonstrate that site releases do not pose a risk to the environment.

The observed release by chemical analysis was correctly scored according to HRS Section 4.1.2.1.1, *Observed release*, which states:

Establish an observed release to surface water for a watershed by demonstrating that the site has released a hazardous substance to the surface water in the watershed. Base this demonstration on either:

- Direct observation...
- Chemical analysis:
 - Analysis of surface water, benthic, or sediment samples indicates that the concentration of hazardous substance(s) has increased significantly above the background concentration for the site for that type of sample (see section 2.3).
 - ...
 - **Some portion of the significant increase must be attributable to the site to establish the observed release**, except: when the site itself consists of contaminated sediments with no identified source, no separate attribution is required. [emphasis added]
 - If an observed release can be established for a watershed, assign an observed release factor value of 550 to that watershed, enter this value in Table 4-1, and proceed to section 4.1.2.1.3.

The following subsections address the two components of establishing a release by chemical analysis.

- 3.8.3.1 Observed Release by Chemical Analysis – Significant Increase
- 3.8.3.2 Observed Release by Chemical Analysis – Attribution

3.8.3.1 Observed Release by Chemical Analysis – Significant Increase

Comment: Cascade questioned the identification of an observed release by chemical analysis at the Site based on removal actions that have taken place.

Response: Observed releases by chemical analysis were correctly identified because the removal action did not address all significant risks associated with the releases that occurred prior to the action. The removal action did not permanently address the released contamination found at the observed release sample locations. As stated above, the Organo-Clay mat, which was placed as a temporary action over part of the contaminated sediment area, was not a permanent cap for the underlying contaminated sediment. Additionally, as identified in the HRS documentation record at proposal, contamination levels at sample locations outside the Organo-Clay mat contain hazardous substance concentrations that meet observed release criteria. These released substances continue to pose a threat to the environment.

In establishing whether or not a hazardous substance is significantly above background concentrations, HRS Section 4.1.2.1.1, *Observed release*, refers the scorer to HRS Section 2.3 for requirements for establishing significant increases in hazardous substance concentrations. HRS Section 2.3, *Likelihood of release*, specifies that the scorer is to “[u]se the criteria in Table 2-3 as the standard for determining analytical significance.” HRS Table 2-3 states the following:

An observed release is established as follows:

- If the background concentration is not detected (or is less than the detection limit), an observed release is established when the sample measurement equals or exceeds the sample quantitation limit.
- If the background concentration equals or exceeds the detection limit, an observed release is established when the sample measurement is 3 times or more above the background concentration.

The HRS documentation record at proposal discusses the establishment of an observed release by chemical analysis. It states on pages 17-18:

Basis for Chemical Analysis:

Sediment samples collected from Port Washington Narrows during two recent sampling events will be used to document an observed release by chemical analysis as presented below.

During the October 2010 EPA ERA, sediment samples were collected around the exposed concrete pipe (i.e., Source 1) (Ref. 5, p. 1). The samples collected to document an observed release were generally collected outside of the removal area (see Figure 1). Samples were collected during the October 2010 EPA ERA from the sediment around the pipe on October 9, 2010 and October 10, 2010 (Ref. 5, p. 1)

Because no background samples were collected during the October 2010 EPA ERA, three sediment samples (GL03E03, GL04E03, and GL04E04), were selected for comparison to release samples since they contained significantly less contamination than the other sediment samples (as shown in Table 3 below), they were composed of similar materials as the other sediment samples, and they were collected below the average high tide line (Ref. 5, pp 1, 2, and 3; Ref. 10). Although these samples may be affected by the release, they are used as background samples as a conservative approach and the release samples still meet the HRS criteria for establishing an observed release (Ref. 1, p.51589) All sediment samples consisted of dark brown-grayish, very

fine to course grained sandy material (Ref. 5, p. 2). Table 3 below provides analytical results of the designated background samples. Either the highest concentration, or the highest detection limit if a particular analyte was not detected in the background samples, for each analyte between these samples was selected to represent background conditions for this HRS documentation record. Using this approach, 11 hazardous substances are documented to be present at elevated concentrations in the sediments of Port Washington Narrows: anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, fluoranthene, phenanthrene, and pyrene as demonstrated in Table 3 below (see Table 3 for references). For these compounds, the highest background concentration selected per analyte by sample are: sample GL04E03 for anthracene, benz(a)anthracene, benzo(a)pyrene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, phenanthrene, and pyrene; sample GL03E03 for benzo(b)fluoranthene; and sample GL04E04 for fluoranthene.

Table 3 of the HRS documentation record at proposal lists the background samples and release samples used for the establishment of the observed release by chemical analysis. In the background samples (GL03E03, GL04E03, and GL04E04), the majority of the scored hazardous substances were not detected. For those hazardous substances that were detected in the background samples (i.e., pyrene, benzo(b)fluoranthene, and fluoranthene), it was documented that release sample concentrations were greater than 3 times the detected background concentrations, thus meeting the requirements of establishing a significant increase and therefore meeting the HRS requirements for establishing a significant increase in contaminant levels as described in HRS Section 2.3.

Even after the removal action took place, the HRS requirements for establishing a significant increase in contaminant levels were met. Further these levels are sufficient to establish actual contamination to the aquatic biota at the observed release sample locations in Port Washington Narrows (see section 3.10.2, Areas of Actual Contamination, of this support document).

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.8.3.2 Observed Release by Chemical Analysis – Attribution

Comment: Cascade asserted that the evaluation of the attribution of the release of hazardous substances did not properly account for the contributions from other off-site sources.

Cascade stated that the HRS evaluation does not properly account for the impact of hazardous substance release from the SC Fuels facility. It stated that the Attribution section on page 29 of the HRS documentation record at proposal under-evaluates observations made by the Department of Ecology during a November 2006 inspection, when Ecology personnel noted an "old gas smell" on the beach near a drainage pipe that was discharging water from the SC Fuels facility. Cascade asserted that products handled at SC Fuels have some of the same constituents (i.e., PAHs) as those found at observed release concentrations in sediments near Source 1.

Additionally, Cascade asserted that contributions of hazardous substances from the stormwater outfalls from the City of Bremerton to the surface water migration pathway were not adequately considered in the HRS evaluation.

Cascade stated:

Although no evidence has been found linking the "visible contamination" addressed by removal action with the City stormwater outfall, the outfall has been the location of documented overflow events (Reference 18, p. 38) and should be considered a potential source of PAHs to surrounding sediments.

Response: The significant increase of hazardous substances to the surface water migration pathway was appropriately attributed to the Bremerton Gasworks site at least in part by the direct observation discussed above in section 3.8.2, Observed Release by Direct Observation, of this support document. That some hazardous substances at the observed release locations theoretically may have come from other sites does not negate this finding.

The HRS does not contain specific instruction regarding the methodology for establishing attribution. However, it is appropriate at this site to establish attribution by first documenting that hazardous substances are present at the Site by showing that the contaminants are associated with a site source, and second, by documenting that at least some of the increase came from the Site.

At the Bremerton Gasworks site, an observed release by chemical analysis was scored in accordance with HRS requirements. These requirements are presented in HRS Section 4.1.2.1.1, *Observed release*, which states in part:

- Chemical analysis:
 - Analysis of surface water, benthic, or sediment samples indicates that the concentration of hazardous substance(s) has increased significantly above the background concentration for the site for that type of sample (see section 2.3).
 - Limit comparisons to similar types of samples and background concentrations - for example, compare surface water samples to surface water background concentrations.
 - ...
 - **Some portion of the significant increase must be attributable to the site to establish the observed release**, except: when the site itself consists of contaminated sediments with no identified source, no separate attribution is required. **[emphasis added]**
 - If an observed release can be established for a watershed, assign an observed release factor value of 550 to that watershed, enter this value in Table 4-1, and proceed to section 4.1.2.1.3.

As established in section 3.8.3.1, Observed Release by Chemical Analysis – Significant Increase, of this support document, significant increases in contaminant levels have been documented. Attribution is established by first documenting that hazardous substances are present at the Site by showing that the contaminants are associated with the Site source (concrete pipe outfall), and second, by demonstrating that some portion of the contamination originated from the discharge in the concrete pipe. This is established by direct observation in section 3.8.2, Observed Release by Direct Observation, of this support document. As documented above, waste material containing hazardous substances was documented flowing out of the source into the Port Washington Narrows. These same hazardous substances have been detected in sediment samples in the surface water migration pathway. This demonstrates that the Site at least partially contributed to the significant increase of hazardous substances in the release.

That other sources in the vicinity of the Site discussed by the commenters, such as city storm sewer discharges, discharges from other nearby facilities, and/or contaminated soils in the vicinity, may be contributing hazardous substances to the surface water migration pathway, does not establish that the increase in contaminant concentrations are totally the result of these other potential sources. The existence of possible releases in the vicinity of the Bremerton Gasworks site does not negate the findings that the source was found to be discharging

hazardous substance-laden material into the surface water migration pathway, nor negate that the hazardous substances detected in the sediment are at least partially the result of releases from the scored source.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.9 Waste Characteristics

Comment: Cascade raised several issues regarding the waste characteristics score at the Site. The commenters asserted that the removal action was not appropriately accounted for in the HRS evaluation and specifically that the EPA overestimated the hazardous waste quantity.

Response: The waste characteristics evaluation was performed consistent with the HRS and the following subsections specifically address the assignment of the hazardous waste quantity value and the impact of the removal actions.

- 3.9.1 Waste Characteristics – Estimate of Hazardous Waste Quantity
- 3.9.2 Waste Characteristics – Effect of Removal

3.9.1 Waste Characteristics – Estimate of Hazardous Waste Quantity

Comment: In scoring the surface water pathway, Cascade challenged the approach for determining the area of the Site. Cascade considered the resulting waste quantity estimate for the Site to be an over-estimate that does not correspond to known conditions at the Site. Cascade stated:

The HRS states the quantity of hazardous substances present in the uplands is unknown, and the default maximum score (100) is used for this parameter (Section 3.1.3.2.2). However, the historical boundary of the former MGP is known and available data from upland investigations roughly defines the current extent of contamination potentially related to the former MGP. Had these data been applied using HRS procedures (i.e., using EPA's area-based method), a much more appropriate hazardous waste quantity score of 4 (rather than 100) would have been derived. This score is more in keeping with the small size of the Site.

Cascade further stated:

Based on previous investigations, it is possible to reasonably estimate the area of the Site, and therefore calculate a hazardous waste quantity relevant to the HRS score. The upland portion of the Site, shown on Figure 1 as the Former Bremerton Gasworks Property, is 1.3 acres. If the sediment areas offshore of the Former Bremerton Gasworks Property out to the outer harbor line are included, the area of the Site expands to 2.8 acres. Using this area and Table 2-5 of Reference 1, the hazardous waste quantity factor would be 4 rather than 100.

Response: The pathway hazardous waste quantity was correctly scored in the HRS documentation record at proposal in accordance with the HRS based on the waste quantity associated with the discharge from Source 1. The upland portion of the Bremerton Gasworks property was not included in the waste quantity estimate as it was not considered a source or included as part of the Site. Therefore, the area calculation methodology proposed by the commenters is incorrect and deviates from HRS requirements for establishing pathway source and pathway hazardous waste quantity.

The following subsections present how the hazardous waste quantity evaluation was established at the Bremerton Gasworks site:

- Source Hazardous Waste Quantity – Source Identification
- Pathway Hazardous Waste Quantity – Minimum Value

Source Hazardous Waste Quantity – Source Identification

The HRS requires that in the development of a hazardous waste quantity factor value, the scorer assign hazardous waste quantity values to the scored sources before evaluating the pathway hazardous waste quantity. The only identified source at this site was the concrete pipe outfall; the upland portion of the facility was not considered a source in the HRS evaluation and thus was not included in the waste quantity estimate.

HRS Section 2.4.2.1, *Source hazardous waste quantity*, states in part:

For each of the three migration pathways, assign a source hazardous waste quantity value to each source (including the unallocated source) having a containment factor value greater than 0 for the pathway being evaluated. Consider the unallocated source to have a containment factor value greater than 0 for each migration pathway.

The waste quantity was only evaluated for the concrete pipe outfall (Source 1) and was based on Tier B, Hazardous Wastestream Quantity.

HRS Section 2.4.2.1.1, *Hazardous constituent quantity*, states:

Evaluate hazardous constituent quantity for the source (or area of observed contamination) based solely on the mass of CERCLA hazardous substances (as defined in CERCLA section 101(14), as amended) allocated to the source (or area of observed contamination). . . .

Based on this mass, designated as C, assign a value for hazardous constituent quantity as follows:

- For the migration pathways, assign the source a value for hazardous constituent quantity using the Tier A equation of table 2–5.

If the hazardous constituent quantity is not adequately determined, assign the source (or area of observed contamination) a value for hazardous constituent quantity based on the available data and proceed to section 2.4.2.1.2.

HRS Section 2.4.2.1.2, *Hazardous wastestream quantity*, states:

Evaluate hazardous wastestream quantity for the source (or area of observed contamination) based on the mass of hazardous wastestreams plus the mass of any additional CERCLA pollutants and contaminants (as defined in CERCLA section 101[33], as amended) that are allocated to the source (or area of observed contamination). . . .

Based on this mass, designated as W, assign a value for hazardous wastestream quantity as follows:

- For the migration pathways, assign the source a value for hazardous wastestream quantity using the Tier B equation of table 2–5.

HRS Section 2.4.2.1.5, *Calculation of source hazardous waste quantity value*, states:

Select the highest of the values assigned to the source (or area of observed contamination) for the hazardous constituent quantity, hazardous wastestream quantity, volume, and area measures. Assign this value as the source hazardous waste quantity value. Do not round to the nearest integer.

Page 10 of the HRS documentation record at proposal specified the name and description of Source 1 as “Concrete Pipe Outfall (Other).” Although there are other possible sources mentioned on page 15 of the HRS documentation record at proposal and in section 3.7, Other Possible Sources, of this support document, none of these other possible sources are included in scoring the Site.

Page 14 of the HRS documentation record presents a discussion of the source hazardous waste quantity evaluation for the concrete pipe outfall (Source 1). It states that “[a]vailable data are insufficient to document a hazardous constituent quantity.” Following the hierarchy established in HRS Section 2.4.2.1, *Source hazardous waste quantity*, the HRS documentation record at proposal identifies that the source hazardous waste quantity evaluation proceeded to the next tier – Tier B, hazardous wastestream quantity. Page 14 of the HRS documentation record states:

The quantity of hazardous substances released is not known. As a conservative estimate, a wastestream quantity of greater than 0 is assigned (Ref. 1, p. 51591, Section 2.4.2.1.2).

The hazardous wastestream quantity was evaluated as “greater than 0”. Sampling and analysis has shown that a discharge of hazardous substances has occurred in the sediments around the concrete pipe outfall. However, the quantity discharged was evaluated as “greater than 0” because the exact amount of hazardous substances discharged from the concrete pipe outfall could not be determined with confidence using the information available at proposal. Evaluating the hazardous wastestream quantity as “greater than 0” is a conservative estimate because it underestimates the actual hazardous wastestream quantity that has been released into the Port Washington Narrows; therefore, given the known hazardous substances identified in Source 1, a wastestream quantity of “greater than 0” is the most conservative estimate possible. Data were insufficient to evaluate the other tiers.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

Pathway Hazardous Waste Quantity – Minimum Value

A minimum pathway hazardous waste quantity value was appropriately scored for the surface water migration pathway based on the evaluation of hazardous wastestream quantity discussed above in Section 3.9.1, Waste Characteristics – Estimate of Hazardous Waste Quantity, of this support document.

HRS Section 2.4.2.2, *Calculation of hazardous waste quantity factor value*, directs the scorer to:

[s]um the source hazardous waste quantity values assigned to all sources (including the unallocated source) or areas of observed contamination for the pathway being evaluated and round this sum to the nearest integer, except: if the sum is greater than 0, but less than 1, round it to 1. Based on this value, select a hazardous waste quantity factor value for the pathway from table 2–6.

....

For a migration pathway, if the hazardous constituent quantity is adequately determined (see section 2.4.2.1.1) for all sources (or all portions of sources and releases remaining after a removal

action), assign the value from table 2–6 as the hazardous waste quantity factor value for the pathway. If the hazardous constituent quantity is not adequately determined for one or more sources (or one or more portions of sources or releases remaining after a removal action) assign a factor value as follows:

- If any target for that migration pathway is subject to Level I or Level II concentrations (see section 2.5), assign either the value from table 2–6 or a value of 100, whichever is greater, as the hazardous waste quantity factor value for that pathway.

As stated above, Page 14 of the HRS documentation record at proposal documented that data were not available to evaluate Tier A, hazardous constituent quantity. Instead, it was most appropriate to evaluate Tier B, hazardous wastestream quantity, with a value of “greater than 0.” This was appropriate considering the nature of the source and the unknown information associated with the pipe discharge history.

As the hazardous constituent quantity was not “adequately determined” (see Section 2.4.2.1.1 of the HRS) for the site source, a value was assigned to the pathway hazardous waste quantity in accordance with HRS Section 2.4.2.2, which directs the scorer to assign a value for the pathway hazardous waste quantity from Table 2–6 of the HRS, *or a value of 100*, whichever is greater, if any target for that migration pathway is subject to Level I or Level II concentrations. Because the presence of Level II concentrations has been appropriately identified (refer to section 3.10, Targets, of this support document), the assigned hazardous waste quantity value of 100 established in the HRS documentation record at proposal was appropriate.

The commenter’s assertion that it is possible to estimate the pathway hazardous waste quantity by including the area of the “Former Bremerton Gasworks Property” and the sediment area offshore out to the outer harbor line, is not consistent with the way the source was evaluated. As discussed above, the HRS requires summing the hazardous waste quantity values associated with the scored sources at the Site. The commenter proposed calculating hazardous waste quantity based on an area of the property boundaries and sediment area, both of which are not established sources in the HRS evaluation (i.e., contaminated soil source and/or contaminated sediment source); this does not correlate to the scored source, the concrete pipe outfall. Because the scored source is a pipe that has discharged unknown quantities of hazardous substances, it was appropriate to evaluate Tier B, not Tier D as proposed by the commenter.

The calculation shown in the HRS documentation record at proposal, which takes into account the nature of the scored source, was appropriate for determining the pathway hazardous waste quantity factor value of 100.

Even if the upland areas had been considered a source and evaluated through Tier D, area, the value would not have been added to the quantity scored for Source 1, the concrete pipe outfall. Adding the upland areas would have only raised the sum of the source waste quantities (as directed in section HRS 2.4.2.2, *Calculation of hazardous waste quantity factor value*) but would not have changed the hazardous waste quantity value determined for Source 1 or the surface water pathway.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.9.2 Waste Characteristics – Effect of Removal

Comment: Cascade challenged that the waste characteristics evaluation in general did not take into account the removal action.

Response: The waste characteristics evaluation appropriately considered the removal action. The removal action did not eliminate the hazardous substances associated with the concrete pipe outfall (Source 1) or the quantity of

hazardous substances released from the Site. The HRS documentation record at proposal correctly scored the hazardous wastestream quantity as greater than zero.

HRS Section 4.1.3.2, *Human food chain threat - waste characteristics* and HRS Section 4.1.4.2, *Environmental threat –waste characteristics* (and their subsections) were used to assign the waste characteristic category values used in the HRS evaluation. These sections identify that for the human food chain threat, the category value is based on the toxicity, persistence, bioaccumulation, and waste quantity values; for the environmental threat the category value is based on the ecosystem toxicity, persistence, ecosystem bioaccumulation, and waste quantity values. These values are based on the hazardous substances in either the Site source or in the observed release, as directed by the HRS sections identified (see section 3.9.1, Waste Characteristics – Estimate of Hazardous Waste Quantity, of this support document).

Pages 31 and 36 of the HRS documentation record at proposal identify the hazardous substances and their associated toxicity, persistence, bioaccumulation, and ecosystem toxicity and ecosystem bioaccumulation factor values. The commenters did not challenge any of these factor values

As explained in section 3.9.1, Waste Characteristics - Estimate of Hazardous Waste Quantity, of this support document, the pathway waste quantity value assigned to the Site was greater than zero based on the unknown amount of waste discharged from Source 1, the concrete pipe outfall. None of this waste was removed from the Port Washington Narrows, and the Organo-Clay mat installed over part of the contaminated sediments is considered a temporary measure. Therefore the same amount of waste remains in the Port Washington Narrows as prior to the removal action and the quantity of greater than zero still applies.

As explained in sections 3.5. Consideration of Removal Action, and 3.8.1, Likelihood of Release – Effect of Removal, of this support document, the removal action was appropriately considered in the HRS evaluation of the Site. This action did not result in the removal of any of the individual hazardous substances released from the source. Additionally, the removal action did not reduce the amount of waste in the environment resulting from the release from Source 1, or permanently remove the risk posed by the release to the aquatic biota. Therefore the action has no impact on the evaluation of the waste characteristics category values for this Site.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.10 Targets

Cascade raised several concerns over the targets scored at the Site. The HRS documentation record at proposal scored targets based on post-removal conditions at the Site. Because hazardous substances discharged from Source 1 remain in the surrounding sediments (including beyond the Organo-Clay mat), the zone of contamination is established using these contaminated sediment samples that remain. Actual contamination is present and was appropriately evaluated in the HRS documentation record at proposal based on post removal conditions. The following subsections address the specific issues regarding the scored targets.

- 3.10.1 Establishment of Target Distance Limit
- 3.10.2 Areas of Actual Contamination
- 3.10.3 Human Food Chain Threat – Identification of Actual Food Chain Targets
 - 3.10.3.1 Food Chain Individual
 - 3.10.3.2 Population
- 3.10.4 Environmental Threat – Eligibility of Targets

3.10.1 Establishment of Target Distance Limit

Comment: In questioning whether targets located far away from the scored source are appropriately eligible for consideration, Cascade challenged the establishment of the target distance limit (TDL) and the consideration of all targets within the TDL for both the human food chain and environmental threats.

Response: The TDL evaluated for the surface water overland/flood migration component was appropriately characterized in accordance with the HRS requirements as extending 15 miles from the probable point of entry (PPE), the pipe discharge point, into Puget Sound.

The directions for establishing a TDL for the surface water pathway, including both the human food chain threat and the environmental threat, are presented in HRS Section 4.1.1.1, *Definition of hazardous substance migration path for overland/flood migration component*, which specifies the following:

The hazardous substance migration path includes both the overland segment and the in-water segment that hazardous substances would take as they migrate away from sources at the site:

- Begin the overland segment at a source and proceed downgradient to the probable point of entry to surface water.
- Begin the in-water segment at this probable point of entry.
 - For rivers, continue the in-water segment in the direction of flow (including any tidal flows) for the distance established by the target distance limit (see section 4.1.1.2).
 - **For lakes, oceans, coastal tidal waters, or Great Lakes, do not consider flow direction. Instead apply the target distance limit as an arc.** [Emphasis added]
 - If the in-water segment includes both rivers and lakes (or oceans, coastal tidal waters, or Great Lakes), apply the target distance limit to their combined in-water segments.

HRS Section 4.1.1.2, *Target distance limit*, directs for the TDL to be established as follows:

The target distance limit defines the maximum distance over which targets are considered in evaluating the site. Determine a separate target distance limit for each watershed as follows:

....

- If there is an observed release from the site to the surface water in the watershed that is based on sampling, begin measuring the target distance limit for the watershed at the probable point of entry; extend the target distance limit either for 15 miles along the surface water or to the most distant sample point that meets the criteria for an observed release to that watershed, whichever is greater.

In evaluating the site, include only surface water targets (for example, intakes, fisheries, sensitive environments) that are within or contiguous to the hazardous substance migration path and located, partially or wholly, at or between the probable point of entry and the target distance limit applicable to the watershed:

....

-Determine whether targets within or contiguous to the hazardous substance migration path are subject to actual or potential contamination as follows:

–If a target is located, partially or wholly, either at or between the probable point of entry and any sampling point that meets the criteria for an observed release to the watershed or at a point that meets the criteria for an observed release by direct observation, evaluate that target as subject to actual contamination, except as otherwise specified for fisheries in section 4.1.3.3 and for wetlands in section 4.1.4.3.1.1. If the actual contamination is based on direct observation, assign Level II to the actual contamination. However, if the actual contamination is based on samples, determine whether the actual contamination is at Level I or Level II concentrations as specified in sections 4.1.2.3, 4.1.3.3, and 4.1.4.3.1.

–If a target is located, partially or wholly, within the target distance limit for the watershed, but not at or between the probable point of entry and any sampling point that meets the criteria for an observed release to the watershed, nor at a point that meets the criteria for an observed release by direct observation, evaluate it as subject to potential contamination.

The HRS documentation record at proposal discusses the establishment of the TDL. It states on page 16:

The discharge point of the concrete pipe (Source 1) is the probable point of entry (PPE) of hazardous substances to the surface water migration pathway. This pipe was located in the intertidal area and was discharging product to the marine waters of Port Washington Narrows which is a part of Puget Sound (Ref. 4, pp. 7 and 25; Ref. 18, p. 19). The entire surface water migration pathway 15-mile target distance limit (TDL) is contained in radial arcs within Puget Sound (Ref. 20, p. 3). Puget Sound is a coastal tidal water body and does not have a distinct direction of flow (Ref. 3, p. 1).

As such, the TDL was established in accordance with the HRS for the water body type associated with the Puget Sound. Because the source was located within a coastal tidal waterway, the TDL was appropriately evaluated as 15 miles away from the PPE, as shown in Reference 20 of the HRS documentation record at proposal. As such, a human food chain fishery, sensitive environments, or habitats located within this TDL are eligible for scoring in the HRS evaluation. Sections 3.10.2, Areas of Actual Contamination, and 3.10.4, Environmental Threat – Eligibility of Targets, of this support document explain the establishment of actually and potentially contaminated targets scored for the Bremerton Gasworks site.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.10.2 Areas of Actual Contamination

Comment: Cascade challenged the establishment of the extent of the zone of actual contamination in surface water used to identify human food chain threat targets, which it asserted has not been shown to extend beyond the immediate vicinity of the Site. It asserted that sediment samples located in the vicinity of the Site only indicate a localized area of contamination, and that the HRS evaluation “wrongly implies contamination from the Site may have affected water quality and fisheries in distant locations, well beyond the likely area of impact.”

Cascade stated:

Sediment samples within 69-85 feet of the discharge point of Source 1 did not contain detectable carcinogenic PAH contamination during EPA's sampling activities, and were designated as

background samples (refer to page 18 and Table 3). There is no indication contamination from the Site has impacted water quality or fisheries in other portions of the target distance limit (set as 15-miles from the site as described in Section 4.1.1.2).

Response: The establishment of the area (or zone) of actual contamination and subsequent scoring of the targets as either subject to actual or potential contamination was performed in accordance with the HRS for both the human food chain threat and the environmental threat pathways. As discussed in section 3.10.1, Establishment of Target Distance Limit, of this support document, HRS Section 4.1.1.2, *Target distance limit*, lays out the methodology for determining whether a target is subject to actual or potential contamination. It states in part:

-Determine whether targets within or contiguous to the hazardous substance migration path are subject to actual or potential contamination as follows:

-If a target is located, partially or wholly, either at or between the probable point of entry and any sampling point that meets the criteria for an observed release to the watershed or at a point that meets the criteria for an observed release by direct observation, evaluate that target as subject to actual contamination, except as otherwise specified for fisheries in section 4.1.3.3 and for wetlands in section 4.1.4.3.1.1. If the actual contamination is based on direct observation, assign Level II to the actual contamination. However, if the actual contamination is based on samples, determine whether the actual contamination is at Level I or Level II concentrations as specified in sections 4.1.2.3, 4.1.3.3, and 4.1.4.3.1.

-If a target is located, partially or wholly, within the target distance limit for the watershed, but not at or between the probable point of entry and any sampling point that meets the criteria for an observed release to the watershed, nor at a point that meets the criteria for an observed release by direct observation, evaluate it as subject to potential contamination.

Additionally, HRS Section 4.1.3.3, *Human food chain threat-targets*, explains how to identify actually or potentially contaminated targets at a site for the human food chain threat. This section states:

Consider a fishery (or portion of a fishery) within the target distance limit of the watershed to be subject to actual human food chain contamination if any of the following apply:

- A hazardous substance having a bioaccumulation potential factor value of 500 or greater is present either in an observed release by direct observation to the watershed or in a surface water or sediment sample from the watershed at a level that meets the criteria for an observed release to the watershed from the site, and at least a portion of the fishery is within the boundaries of the observed release (that is, it is located either at the point of direct observation or at or between the probable point of entry and the most distant sampling point establishing the observed release).

...

For a fishery that meets any of these three criteria, but that is not wholly within the boundaries of the observed release, consider only the portion of the fishery that is within the boundaries of the observed release to be subject to actual human food chain contamination. Consider the remainder of the fishery within the target distance limit to be subject to potential food chain contamination.

HRS Section 4.1.4.3.1, *Sensitive environments*, explains how to identify the actually or potentially contaminated targets at a site for the environmental threat. This section states:

Evaluate sensitive environments along the hazardous substance migration path for the watershed based on three factors: Level I concentrations, Level II concentrations, and potential contamination.

Determine which factor applies to each sensitive environment as specified in section 4.1.2.3, except: use ecological-based benchmarks (Table 4–22) rather than health-based benchmarks (Table 3–10) in determining the level of contamination from samples. In determining the level of actual contamination, use a point of direct observation anywhere within the sensitive environment or samples (that is, surface water, benthic, or sediment samples) taken anywhere within or beyond the sensitive environment (or anywhere adjacent to or beyond the sensitive environment if it is contiguous to the migration path).

Samples taken during the October 2010 Emergency Removal Action document the presence of hazardous substances within the surface water migration pathway. Page 39 of the HRS documentation record at proposal states:

A zone of actual contamination subject to Level II concentrations is present along Port Washington Narrows as described by contaminated sample points WN01SD, WN02SD, WN03SD, WN04SD, GL03E01, GL03W01, GL03W02, GL04E01, GL04E02, GL04W01, GL04W02, GL04W03, GL05E01, GL05E02, GL05E03, GL05W01, GL05W02, GL05W03, GL06E01, GL06E02, GL06E03, GL06W01, GL06W02, and GL06W03 (see section 4.1.2.1.1 and Ref. 10).

These samples were focused adjacent to the scored source in the surface water migration pathway. As such, the areas of actual contamination (for both the human food chain threat and environmental threat) according to the HRS extend from the PPE to the farthest extent of observed release samples at this site. Specifically, the areas of actual contamination extend from the PPE to sediment sample WN04SD; this sample is subject to Level II concentrations for both threats because it contains hazardous substances that exceed both health-based and ecological-based benchmarks. The location of the samples and the PPE can be seen on Figure 1 of this support document.

That these samples are relatively close to the scored pipe source (i.e., they do not extend to “distant locations” in the 15-mile TDL), does not signify that the contamination in the surface water migration pathway is localized and not impacting targets at distances within the TDL. Until more extensive sampling is performed, the total extent of the contamination in the Port Washington Narrows cannot be determined. However, the sampling to date is sufficient to identify actually contaminated food chain targets and environmental targets in the sampled area. As stated in the HRS documentation record at proposal, the Suquamish Tribe has indicated that the area of contamination is within their accustomed fishing area and they have been documented to fish for subsistence within this zone of contamination. Additionally, the HRS documentation record at proposal has identified critical habitat for the federally-listed threatened Chinook salmon and habitat known to be used by the federally-listed threatened Steelhead that overlaps with the area of contamination. As provided for in the HRS, a target need only be partially located within the zone of actual contamination, for it to be considered subject to actual contamination. Targets located wholly outside of the zone of actual contamination, yet still within the TDL are subject to potential contamination, according to the HRS (see HRS Section 4.1.3.3, *Human food chain threat-targets* quoted above). That is, no contamination need be shown at distant locations within the TDL for targets located there to be scored as potentially contaminated.

Both sensitive environments and a human food chain fishery were documented to be at least partially located within this zone of actual contamination. Refer to sections 3.10.3, Human Food Chain Threat – Identification of

Actual Food Chain Targets, and 3.10.4, Environmental Threat – Eligibility of Targets, of this support document for further discussion on the scoring of these targets.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.10.3 Human Food Chain Threat - Identification of Actual Food Chain Targets

Comment: Cascade asserted that the impacts on the human food chain fishery associated with the surface water migration pathway are not well documented. Cascade stated it is “not aware of any data documenting confirmed impacts to the aquatic food chain, active fisheries in the vicinity of the Site, or potential consumers of seafood.” It further stated that “there are no data confirming that an impact to the food chain or to tribal fisheries has occurred.”

Response: The scoring of human food chain targets correctly identified an actually contaminated fishery within the area of contamination, and potentially contaminated targets within the TDL. Furthermore, there is evidence that the release from the Site continues to pose a threat to the human consumers of the fishery and the commenters provided no contradictory evidence.

As discussed in section 3.10.1, Establishment of Target Distance Limit, of this support document, the HRS instructs the scorer to consider that targets are subject to actual contamination if they are between the PPE and any sampling point that meets the criteria for an observed release. HRS Section 4.1.3.3, *Human food chain threat-targets*, identifies further requirements for determining a human food chain fishery within the zone of contamination. It states:

Evaluate two target factors for each watershed: food chain individual and population. For both factors, determine whether the target fisheries are subject to actual or potential human food chain contamination.

Consider a fishery (or portion of a fishery) within the target distance limit of the watershed to be subject to actual human food chain contamination if any of the following apply:

- A hazardous substance having a bioaccumulation potential factor value of 500 or greater is present either in an observed release by direct observation to the watershed or in a surface water or sediment sample from the watershed at a level that meets the criteria for an observed release to the watershed from the site, and at least a portion of the fishery is within the boundaries of the observed release (that is, it is located either at the point of direct observation or at or between the probable point of entry and the most distant sampling point establishing the observed release).

....

For a fishery that meets any of these three criteria, but that is not wholly within the boundaries of the observed release, consider only the portion of the fishery that is within the boundaries of the observed release to be subject to actual human food chain contamination. Consider the remainder of the fishery within the target distance limit to be subject to potential food chain contamination.

In addition, consider all other fisheries that are partially or wholly within the target distance limit for the watershed, including fisheries partially or wholly within the boundaries of an observed release for the watershed that do not meet any of the three criteria listed above, to be subject to potential human food chain contamination. If only a portion of the fishery is within the target

distance limit for the watershed, include only that portion in evaluating the targets factor category.

When a fishery (or portion of a fishery) is subject to actual food chain contamination, determine the part of the fishery subject to Level I concentrations and the part subject to Level II concentrations. If the actual food chain contamination is based on direct observation, evaluate it using Level II concentrations. However, if the actual food chain contamination is based on samples from the watershed, use these samples and, if available, additional tissue samples from aquatic human food chain organisms as specified below, to determine the part subject to Level I concentrations and the part subject to Level II concentrations. . . .

As established in section 3.8, Likelihood of Release, of this support document, an observed release by direct observation and several observed releases by chemical analysis have been established at this site in accordance with the HRS. Samples taken during the October 2010 Emergency Removal Action document the presence of hazardous substances within the surface water migration pathway, which contain bioaccumulation potential factor values of 500 or greater, and are located within an established fishery. Page 39 of the HRS documentation record at proposal states:

A zone of actual contamination subject to Level II concentrations is present along Port Washington Narrows as described by contaminated sample points WN01SD, WN02SD, WN03SD, WN04SD, GL03E01, GL03W01, GL03W02, GL04E01, GL04E02, GL04W01, GL04W02, GL04W03, GL05E01, GL05E02, GL05E03, GL05W01, GL05W02, GL05W03, GL06E01, GL06E02, GL06E03, GL06W01, GL06W02, and GL06W03 (see section 4.1.2.1.1 and Ref. 10).

Page 33 of the HRS documentation record at proposal discusses that a fishery was documented within the zone of actual contamination:

A fishery has historically occurred in the zone of actual contamination (Ref. 25, p. 1). The Bremerton Gasworks site is situated within the Suquamish Tribe's usual and accustomed fishing area. Within that area, the Tribe has treaty-reserved fishing rights and is a co-manager of fishery resources with the State of Washington. (Ref. 25, pp. 1-2; Ref. 35, p. 1). A food chain individual factor value of 45 is assigned because a fishery is subject to Level II concentrations.

Therefore, the establishment of the zone of contamination and consideration of targets within the zone of contamination to be subject to actual contamination was consistent with the HRS. The scored fishery was identified as subject to actual human food chain contamination, as samples collected within this zone were documented to contain hazardous substances with a bioaccumulation concentration factor of greater than 500 (SVOCs contained in multiple samples within the fishery, as presented on page 31 of the HRS documentation record at proposal).

Contrary to the commenter's assertions that there are no data confirming that an impact to the food chain or tribal fisheries has occurred, the criteria for scoring an impact to the human food chain targets were evaluated and scored in accordance with the HRS. Further, contaminated sediments remain at the Site, including those sediments outside of the Organo-Clay mat, which contain hazardous substances with bioaccumulation potential factor values of 500 or greater that continue to pose a risk to the consumers of the fisheries that have been documented to be present at the Site. This bioaccumulation potential means that the fish present can accumulate contaminant levels at multiple levels above the contaminant concentrations found in the sediments, and that the consumers of the fishery may be exposed to those levels, not just the levels in the surface water sediment samples. Additionally, the commenter has not provided any evidence or other materials to show that no risk remains at the Site to the fishery consumers.

The following subsections describe in further detail the scoring factors of Food Chain Individual and Population, in the evaluation of the human food chain targets.

- 3.10.3.1 Food Chain Individual
- 3.10.3.2 Population

3.10.3.1 Food Chain Individual

Comment: In asserting that there are no confirmed impacts to the aquatic food chain and to active fisheries at the Site, Cascade challenged the evaluation of the food chain individual reflecting actual contamination.

Response: As Level II concentrations were correctly identified in the HRS documentation record at proposal, the food chain individual was appropriately scored according to the HRS. HRS Section 4.1.3.3.1, *Food chain individual*, states:

Evaluate the food chain individual factor based on the fisheries (or portions of fisheries) within the target distance limit for the watershed. Assign this factor a value as follows:

- If any fishery (or portion of a fishery) is subject to Level I concentrations, assign a value of 50.
- If not, but if any fishery (or portion of a fishery) is subject to Level II concentrations, assign a value of 45.

As stated on page 33 of the HRS documentation record at proposal, the Suquamish Tribe's usual and accustomed fishery has been documented to be within the zone of contamination. Since hazardous substances found within the zone of contamination are found to contain bioaccumulation potential factor values of 500 or greater, Level II concentrations were correctly identified. As such, the food chain individual factor value of 45 was appropriately assigned.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.10.3.2 Population

Comment: Cascade challenged the establishment of the population factor value, asserting that there are no confirmed impacts to the aquatic food chain or to fisheries.

Response: The food chain population was appropriately scored according to the HRS, as subsistence fishing by the Suquamish Tribe has been documented to occur within the zone of contamination. HRS Section 4.1.3.3.2, *Population*, states:

Evaluate the population factor for the watershed based on three factors: Level I concentrations, Level II concentrations, and potential human food chain contamination. Determine which factor applies for a fishery (or portion of a fishery) as specified in section 4.1.3.3.

....

HRS Section 4.1.3.3.2.2, *Level II concentrations*, states:

Determine those fisheries (or portions of fisheries) within the watershed that are subject to Level II concentrations. Do not include any fisheries (or portions of fisheries) already counted under the Level I concentrations factor.

Assign each fishery (or portion of a fishery) a value for human food chain population from table 4–18, based on the estimated human food production for the fishery. Estimate the human food chain production for the fishery as specified in section 4.1.3.3.2.1.

Sum the human food chain population value for each fishery (and portion of a fishery). If this sum is less than 1, do not round it to the nearest integer; if 1 or more, round to the nearest integer. Assign the resulting value as the Level II concentrations factor value. Enter this value in table 4–1.

Page 34 of the HRS documentation record at proposal explains that:

Subsistence fishing has historically occurred in the zone of actual contamination and is within the Suquamish Tribe’s usual and accustomed fishing area (Ref. 25, p. 1; Ref. 35, p. 1). The amount of fish catch is unknown but greater than zero pounds per year. A value of 0.03 is assigned to Level II concentrations

Because hazardous substances that contain bioaccumulation potential factor values of 500 or greater are still present at the Site in the zone of contamination, the fishery was appropriately considered as subject to Level II contamination at the Site. Therefore, because the amount of fish caught within the fishery is unknown but greater than zero pounds, the corresponding value of 0.03 was appropriately assigned for the Level II concentrations.

Further, HRS Section 4.1.3.3.2.3, *Potential human food chain contamination*, states to “[d]etermine those fisheries (or portions of fisheries) within the watershed that are subject to potential human food chain contamination.” This section of the HRS directs the scorer to calculate the value for the potential human food chain contamination factor by a specified calculation method that takes into account the harvest from the fishery within the 15-mile TDL and dilution weights.

Table 7 of the HRS documentation record at proposal presents data on the estimated fish harvest within the 15-mile TDL. Table 8 of the HRS documentation record at proposal presents the calculation of the potential human food chain contamination factor value. Upon analysis of the harvest within the 15-mile TDL and the human food chain population value and dilution weights, a potential human food chain contamination factor value of 0.31 was assigned, as directed by the HRS (see section 4.1.3.3.2.3 of the HRS documentation record at proposal).

As such, the population factor value of the human food chain threat was appropriately evaluated in accordance with the HRS.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.10.4 Environmental Threat – Eligibility of Targets

Comment: Cascade challenged the eligibility of the scored sensitive environments. It stated that “there is no indication” that hazardous substances from releases at the Bremerton Gasworks site have impacted any threatened or endangered species.

Response: The critical habitat for the federal-listed threatened Chinook salmon and habitat known to be used by the federal-listed threatened Steelhead that are scored at the Bremerton Gasworks site are eligible for scoring and were correctly scored in accordance with the HRS.

HRS Section 4.1.4.3.1, *Sensitive environments*, directs the scorer to:

Evaluate sensitive environments along the hazardous substance migration path for the watershed based on three factors: Level I concentrations, Level II concentrations, and potential contamination.

Determine which factor applies to each sensitive environment as specified in section 4.1.2.3, except: use ecological-based benchmarks (Table 4–22) . . . in determining the level of contamination from samples. In determining the level of actual contamination, use a point of direct observation anywhere within the sensitive environment or samples (that is, surface water, benthic, or sediment samples) taken anywhere within or beyond the sensitive environment (or anywhere adjacent to or beyond the sensitive environment if it is contiguous to the migration path).

HRS Section 4.1.4.3.1.2, *Level II concentrations*, states:

Assign value(s) from table 4–23 to each sensitive environment subject to Level II concentrations. Do not include sensitive environments already counted for table 4–23 under the Level I concentrations factor for this watershed.

Table 4-23 of the HRS

Sensitive Environment	Assigned value
Critical habitat ^a for Federal designated endangered or threatened species	100
...	
Habitat known to be used by Federal designated or proposed endangered or threatened species	75
...	

^a Critical habitat as defined in 50 CFR 424.02.

As discussed in Section 3.10.2, Areas of Actual Contamination, of this support document, multiple samples taken from the Port Washington Narrows showed Level II concentrations of hazardous substances. These samples are located within a documented habitat area for the Chinook salmon and the Steelhead fish. Page 39 of the HRS documentation record at proposal states:

A zone of actual contamination subject to Level II concentrations is present along Port Washington Narrows as described by contaminated sample points WN01SD, WN02SD, WN03SD, WN04SD, GL03E01, GL03W01, GL03W02, GL04E01, GL04E02, GL04W01, GL04W02, GL04W03, GL05E01, GL05E02, GL05E03, GL05W01, GL05W02, GL05W03, GL06E01, GL06E02, GL06E03, GL06W01, GL06W02, and GL06W03 (see section 4.1.2.1.1 and Ref. 10). **This zone of actual contamination lies within the critical habitat for the Federal-listed threatened Puget Sound Evolutionary Significant Unit (ESU) Chinook salmon** (Ref. 20, pp. 2 and 3) (see Table 11 below). Additionally, the Federal-listed threatened Puget Sound ESU Steelhead is known to be present within the zone of actual contamination (Ref. 20, pp. 2 and 3; Ref. 29, pp. 1 - 3) (See Table 14 below). [Emphasis added]

HRS documentation record at proposal table 11:

Table 11 Species Subject to Level II Concentrations			
Sensitive Environment	Distance from PPE to Nearest Sensitive Environment	Sensitive Environment Value (Ref. 1, Table 4-23)	References
Critical Habitat for the Federal-listed threatened Chinook salmon (<i>oncorhynchus tshawytscha</i>)	0 feet	100	Ref. 20, pp. 2 and 3; Ref. 29, pp. 1 -3
Habitat known to be used by the Federal-listed threatened Steelhead (<i>Oncorhynchus mykiss</i>)	0 feet	75	Ref. 20, p. 2; Ref. 29, pp. 1 -3
Sum of Values		175	

As such, because a portion of the critical habitat for the Chinook salmon (federally-listed threatened) and the habitat for the Steelhead (federally-listed threatened), overlap the area of observed contamination and the area contains Level II contamination, the requirements laid out in HRS Section 4.1.4.3.1, *Sensitive environments*, as provided by HRS Table 4-23, were met. Contrary to the assertions made by Cascade, actual impact to these threatened species need not be established to validate the scoring of the sensitive environments. The HRS contains no provision requiring that a documented impact to a species be established to score a sensitive environment. However, as discussed in section 3.10.3, Human Food Chain Threat - Identification of Actual Food Chain Targets, of this support document, the bioaccumulation potential means that fish present can accumulate contaminant concentrations at much higher levels than the contaminant concentrations found in the sediment, and these federally-listed threatened fish species may be exposed to those levels and not just the levels in the surface water sediment samples. Additionally, the commenter has not provided any evidence or other materials to show that no risk remains at the Site to this sensitive environment.

This comment results in no change to the HRS score and no change in the decision to place the Site on the NPL.

3.11 Requested Revisions to the HRS Documentation Record and the NPL Site Narrative

Comment: Cascade provided several specific comments related to clarification of wording in the HRS documentation record at proposal.

Response: The wording in the HRS documentation record at proposal was adequate for placing the Bremerton Gasworks site on the NPL; however, the HRS documentation record at promulgation has been revised to include some clarifications regarding Cascade's comments as discussed below.

For each comment where suggested revised text was provided by the commenter, that text is provided after the comment summary. The responses provided indicate whether or not the suggested wording changes were made in the HRS documentation record at promulgation. If the change was not made, a brief discussion as to why the revised text was not incorporated is provided. It is also noted whether or not exact wording was used or whether the text was modified to remain consistent with the HRS documentation record and this support document. In cases where the required wording could be construed as having an effect on the HRS evaluation, the response provides a reference to the section in the support document that addresses the comment.

The following subsection headers refer to the specific sentence or paragraph requested to be changed in the HRS documentation record at proposal.

Page 7, 1st paragraph, 3rd sentence

Comment: Cascade requested that the referenced sentence in the HRS documentation record at proposal be revised to further explain the type of coal gasification used at the former Bremerton Manufactured Gas Plant (MGP). The commenter provided the following revised text: “Coal gasification was conducted using the carbureted water gas technology”.

Response: The referenced sentence in the HRS documentation record at promulgation is revised to clarify that the process used at the former Bremerton MGP was the carbureted water gas method. Reference 6 has been added to the HRS documentation record at promulgation to provide a reference for the carbureted water gas technology and terminology used. The exact wording provided by the commenter was modified to be consistent with the support document and Reference 6 of the HRS documentation record at promulgation.

For further discussion on Bremerton MGP operations, please see Section 3.2, Previous MGP Operations, of this support document.

Page 7, 2nd paragraph and Figure 1

Comment: Cascade requested that the parcels identified in the referenced sentences and Figure 1 in HRS documentation record at proposal that comprise the former Bremerton MGP property be re-named by actual owner name and to make this change throughout the HRS documentation record at proposal. The commenter also requested that a new Figure 1 from the HRS documentation record at proposal be included to reflect the actual boundaries of the property associated with the former Bremerton MGP.

Response: The HRS documentation record has been revised at promulgation to reference the actual owner name of each of the parcels that comprises the former Bremerton MGP. Reference 37 has been added to the HRS documentation record at promulgation to clarify property boundaries. Figure 1 was not revised to include actual property owner names; however, property boundaries were confirmed.

For further discussion of the names of the parcels of property associated with the former Bremerton MGP, please see section 3.3, Extent of Site, of this support document.

Page 7, 2nd paragraph, 4th sentence

Comment: Cascade requested that the description of the former and current land use at the former Bremerton MGP in the referenced sentence in the HRS documentation record at proposal be clarified and the specific uses on the properties be provided. The commenter provided the following revised text:

“After the MGP was dismantled, the McConkey and Sesko Properties were used for industrial purposes including metal fabrication, concrete forming, and boat repair. Between the early to mid-1940s to approximately 1993, a petroleum storage and distribution facility was located on the Sesko Property west of the Former Bremerton Gasworks Property. The majority of the Former Bremerton Gasworks Property is currently vacant and unused”.

Response: The HRS documentation record has been revised at promulgation to include former and current land uses at the former Bremerton MGP. The exact wording provided by the commenter was modified to be consistent with the HRS documentation record at promulgation and this support document. However, the identification of current ownership of parcels in the vicinity of the Site does not assign liability.

Inasmuch as this comment concerns liability for the contamination at this site, whether any party may be liable for response costs is not considered when evaluating a site under the HRS. The NPL serves primarily as an informational and management tool. The identification of a site for the NPL is intended primarily to guide EPA in determining which sites warrant further investigation to assess the nature and extent of the human health and environmental risks associated with the site and to determine what CERCLA-financed remedial action(s), if any, may be appropriate. Identification of a site for the NPL does not reflect a judgment on the activities of the owner(s) or operator(s) of a site. It does not require those persons to undertake any action, nor does it assign any liability to any person. Subsequent government actions will be necessary in order to do so, and these actions will be attended by all appropriate procedural safeguards. This position, stated in the legislative history of CERCLA, has been explained in the *Federal Register* (48 FR 40759, September 8, 1983 and 53 FR 23988, June 24, 1988).

Page 7, 2nd paragraph, last sentence

Comment: Cascade requested that the referenced sentence in the HRS documentation record at proposal be revised to distinguish the number and contents of the above ground storage tanks (ASTs) associated with the former Bremerton MGP. Cascade asserted that the former ASTs included 6 petroleum ASTs and 11 gas holders. Cascade provided the following revised text:

“The former MGP was located on an irregular-shaped parcel of real property that today includes portions of three existing tax parcels: the “North McConkey Property,” the “South McConkey Property,” and the “Sesko Property.” The real property occupied by the former MGP is referred to as the “Former Bremerton Gasworks Property.” A map showing the boundaries of the Former Bremerton Gasworks Property, the North McConkey Property, the South McConkey Property, the Sesko Property, and other site features is provided on Figure 1. The former MGP included approximately 17 aboveground storage tanks (ASTs): 6 were used to store petroleum and 11 were used as gas holders”.

Response: While the commenter provided revised text, the commenter did not provide a reference confirming the type of ASTs at the former Bremerton MGP. The HRS documentation record has been revised at promulgation to reflect the presence of numerous ASTs at the former Bremerton MGP. However, the specific types of ASTs could not be accurately determined so the language has only been revised to reflect what current data supports; this does not impact on the site score as the ASTs were not a listed source.

Page 7, 7th paragraph

Comment: Cascade requested deleting the referenced paragraph in the HRS documentation record at proposal. The referenced paragraph discusses the ground water to surface water component of the surface water pathway and states that the ground water to surface water component was not scored.

Response: While the ground water data was not used in the scoring of the Site, the data may be relevant at a later stage in the listing process, specifically the RI/FS stage. The paragraph of the HRS documentation record at promulgation was revised to emphasize that ground water data was not used for the purposes of scoring in the HRS evaluation.

For further discussion of pathways not scored, please see section 3.4, Discussion of Pathways Not Scored, of this support document.

Page 10, 3rd paragraph, 1st sentence

Comment: Cascade requested that the referenced sentence in the HRS documentation record at proposal, describing the release from the source, be revised to more accurately describe the type of waste associated with the process used at the former Bremerton MGP and contents of the release from the source. Cascade provided the following revised text: “The pipe was determined to be releasing a product with characteristics similar to coal tar into the mid-intertidal zone of a navigable waterway.”

Response: The HRS documentation record has been revised at promulgation to reflect carbureted water gas technology as the process used at the former Bremerton MGP. The HRS documentation record at promulgation was further revised to reflect the type of byproduct that was the result of the carbureted water gas process, which was described as a product with characteristics similar to coal tar. Further, the byproduct is not the basis for the HRS score; rather it is the hazardous substances associated with the byproduct or the release being evaluated that contributes to the score.

For further discussion of the process and byproducts from the former Bremerton MPG, please see section 3.2, Previous MGP Operations, of this support document.

Page 10, 3rd paragraph, last sentence

Comment: Cascade requested that the referenced sentence in the HRS documentation record at proposal be revised to more accurately describe the analytes associated with the byproduct of the processes at the former Bremerton MGP.

Response: The HRS documentation record at promulgation has been revised to reflect carbureted water gas technology as the process used at the former Bremerton MGP; the byproduct from this process has characteristics similar to coal tar.

For further discussion of the process and byproducts from the former Bremerton MPG, please see section 3.2, Previous MGP Operations, of this support document.

Page 10, 5th paragraph, 5th sentence

Comment: Cascade requested that the referenced sentence in the HRS documentation record at proposal that describes the analytical results from the pipe sampling be revised to not identify gasoline, diesel, or motor oil. In addition, the commenter requested including a statement that indicates the laboratory chemist noted that the chromatograms did not match the petroleum products. The commenter provided the following revised text:

Analytical results from these samples indicate the presence of metals, VOCs, and SVOCs. Gasoline-range petroleum hydrocarbons, diesel-range petroleum hydrocarbons, and oil-range petroleum hydrocarbons were also detected, but the laboratory chemist indicated the chromatograms did not match petroleum products (Reference 4, p. 17).

Response: The HRS documentation record at promulgation has been revised to describe the analytical results in the concrete pipe outfall as gasoline-range hydrocarbons, diesel-range petroleum hydrocarbons, motor-oil range hydrocarbons, metals, VOCs and SVOCs including PAHs. The statement regarding the results of the chromatograms has been addressed in the attribution section of the HRS documentation record at promulgation. The wording provided by the commenter has been modified to reflect the wording used in the cited reference.

For further discussion of the analytical results related to Source 1 (the concrete pipe outfall), please see section 3.8.3.2, Observed Release by Chemical Analysis – Attribution, of this support document.

Page 11, 2nd paragraph

Comment: Cascade requested that the referenced paragraph in the HRS documentation record at proposal that describes the location of the source with reference to a map be revised to state the following:

Prior to the removal action, the concrete pipe outfall was located in the intertidal zone of Port Washington Narrows. The plugged end of the concrete pipe is located just north of the Sesko property (Ref. 4, p. 29).

Response: The HRS documentation record at promulgation has been revised to include the revised text provided by the commenter. Page 25 of Reference 4 to the HRS documentation record at proposal has been included as the reference citation.

Page 14, section 2.4.2.1.4

Comment: Cascade asserted that the area of the Site can be estimated and the hazardous waste quantity factor value should be 4 instead of 100.

Response: The hazardous waste quantity was correctly evaluated in the HRS documentation record at proposal. Please see section 3.9.1, Waste Characteristics – Estimate of Hazardous Waste Quantity, of this support document.

Page 15, 1st and 2nd paragraphs

Comment: Cascade requests that the referenced paragraphs in the HRS documentation record at proposal that discuss other possible sources be revised to state that the data sample locations include properties other than the former Bremerton MGP. The commenter provided the following revised language to replace the second sentence of the 1st paragraph:

During this field event, two borings (MP01 and MP04) and one monitoring well (MP04) were installed on the North McConkey Property and two borings (MP02 and MP03) were installed in Thompson Drive on the west side of the North McConkey Property.

Response: The HRS documentation record at promulgation has been revised to specify the location of the borings. For further discussion of the sample locations and other possible sources please see section 3.7, Other Possible Sources, of this document.

Page 15, 1st paragraph, 4th sentence

Comment: Cascade requested that the referenced sentence in the HRS documentation record at proposal that describes the type of samples collected as surface soil samples be revised to describe them as soil samples.

Response: The HRS documentation record at promulgation is corrected to describe the type of samples collected as soil samples.

Page 16, section 4.1.1.2

Comment: Cascade requested that clarification be provided in the referenced section in the HRS documentation record at proposal regarding data indicating contamination beyond the Site. The commenter provided the

following revised text: “However, there are no data indicating that contamination has extended away from the Site into this area.”

Response: Lack of data does not demonstrate that no contamination exists. For further discussion on target distance limit and the areas of contamination, please see section 3.10, Targets, and section 3.10.2, Areas of Actual Contamination, in this support document.

Page 17, 1st paragraph, last sentence

Comment: Cascade requested that the referenced sentence in HRS documentation record at proposal be revised to clarify that the byproduct of the carbureted water process is not coal tar and that the analytes detected in the waste are found in the byproduct of carbureted water gas process. The commenter provided the following text: “These analytes are likely components of tars generated during the carbureted water gas production process.”

Response: The HRS documentation record at promulgation has been revised to clarify the byproduct of the carbureted water gas process and the analytes found in the byproduct. For further discussion of the process and byproducts from the former Bremerton MPG, please see section 3.2, Previous MGP Operations, of this support document.

Page 25, 1st paragraph, 2nd sentence

Comment: Cascade requested that a misspelling of the word auger in the referenced sentence in HRS documentation record at proposal be corrected.

Response: The HRS documentation record at promulgation is revised to reflect the correct spelling of the word auger.

Page 29-30

Comment: Cascade requested that the referenced pages addressing potential additional sources of contamination be revised to include additional potential sources of contamination in the Attribution section of the HRS documentation record at proposal. Additional sources include:

(1) historical MGP operations in the aquatic portion of the Site, including the former dock structure in the northwestern portion of the Site; (2) historical MGP operations in the upland portion of the Site; (3) historical placement by various parties of potentially impacted fill and other materials within the ravine in the northeastern portion of the Site; (4) the presence of creosote-treated pilings and other structures in aquatic areas of the Site, many of which had no connection to the former MGP; (5) the operation of fuel pipelines and fuel docks by various parties within and in the vicinity of the Site; (6) historical stormwater or wastewater discharges to Port Washington Narrows, including potential discharges through the concrete pipe that is the subject of the HRS; and (7) other industrial uses of the Site, including re-grading or disturbance of the Site after termination of MGP operations.

Response: The HRS documentation record at proposal sufficiently addresses other potential sources and correctly attributes contamination in the sediment, at least in part, to Source 1. For discussion of other possible sources, please see section 3.7, Other Possible Sources and section 3.8.3.2, Observed Release by Chemical Analysis – Attribution.

Page 29, 2nd paragraph

Comment: Cascade requested that the referenced paragraph in the HRS documentation record at proposal be revised to clarify the type of waste found in the concrete pipe outfall (Source 1). The commenter provided the following revised text:

Coal tar is a byproduct of the high-temperature treatment of coal to make coke or natural gas (Ref. 11, p.1). The major chemicals in coal tar that can cause harmful health effects are polycyclic aromatic hydrocarbons (PAHs), phenol, and cresols (Ref. 11, p.3). Coal tar also contains volatile aromatics, including benzene, ethylbenzene, toluene, and xylenes (Cohen and Mercer, DNAPL Site Evaluation, 1993, Table 3-7). Other MGP tars, including carbureted water gas tars, contain similar chemicals, though the composition of MGP tars varies depending on the feedstock. The product discharging from the concrete pipe was described as creosote (Ref. 13, p.2), but was more similar to coal tar than to creosote (a distilled product of coal tar, in which the volatile aromatics have been removed) based on the presence of volatile aromatics.

Response: The HRS documentation record at promulgation has been revised to clarify the type of waste found in the concrete pipe outfall (Source 1) near the former Bremerton MGP. For further discussion of the process and byproducts from the former Bremerton MPG, please see section 3.2, Previous MGP Operations, of this support document.

Page 29, 3rd paragraph, last sentence

Comment: Cascade requested that the referenced sentence in the HRS documentation record at proposal be revised to reflect that a city of Bremerton stormwater outfall has been the location of documented overflow events and could be considered a potential source of PAHs in sediments. The commenters provided the following revised text:

The City of Bremerton stormwater outfall is not considered a likely source of visible sediment contamination, but it has been the location of documented combined sewer overflow events, and is considered a potential source of PAHs to sediments.

Response: The HRS documentation record at promulgation has been revised to reflect the comment and state that potential PAH contaminants could be associated with the stormwater outfall; however, the stormwater overflow has not been sampled. For further discussion on other possible sources and attribution, please see section 3.7, Other Possible Sources and section 3.8.3.2 Observed Release by Chemical Analysis – Attribution.

Page 29, 4th paragraph, 4th sentence

Comment: Cascade requested that the referenced sentence in the HRS documentation record at proposal that discusses a property across the street from the former Bremerton MGP be revised to include information regarding a 2006 Department of Ecology inspection. The commenter provided the following revised text:

Products (i.e., heating oil) handled at SC Fuels have some of the same constituents (i.e., PAHs) (Ref. 22, p. 105) as those found at observed release concentrations in sediments near Source 1. While there is no documented evidence of a release from this facility to sediments, a Department of Ecology inspection in November 2006 noted an “old gas smell” on the beach near a drainage pipe that was discharging water from the SC Fuels facility.

Response: The HRS documentation record at proposal sufficiently describes the SC Fuels facility and the ASTs associated with its property for the purposes of the HRS evaluation. The EPA contacted the Department of

Ecology (as referred to above) to locate the November 2006 inspection cited by Cascade to confirm that the above suggested changes were supported by documentation; however, the document was unable to be located and the changes could not be verified. Additionally, Cascade failed to provide the November 2006 Department of Ecology inspection report with their comments that would allow for their statement to be verified.

Thus, as the statement could not be verified or referenced, the HRS documentation record has not been revised to incorporate the revised text. Even if the revised text were to be incorporated, it would result in no change to the HRS score and no change in the decision to place the Site on the NPL.

Page 30, 2nd paragraph, 1st, 2nd and 3rd sentences

Comment: Cascade requested that the referenced sentences in the HRS documentation record at proposal be revised to clarify the location of the referenced petroleum storage facilities. The commenters provided the following revised text:

Two additional petroleum storage and distribution facilities were located near the former MGP. These facilities included: a facility located on the Sesko Property, in operation between approximately the early to mid-1940s to approximately 1993; and a facility located southwest of the former MGP in operation between 1942 and 1992 (Ref. 4, p. 6; Ref. 26, p. 1). The facility on the Sesko Property included at least 10 ASTs and two unloading racks which have been removed (Ref. 21, p. 7; Ref. 26, p. 1).

Response: The HRS documentation record at promulgation has been revised to clarify the location of petroleum storage facilities.

Page 30, 2nd paragraph, 4th sentence

Comment: Cascade requested that the referenced sentence in the HRS documentation record at proposal be revised to clarify the location of the underground fuel pipeline. The commenter provided the following revised text:

An underground fuel pipeline (currently abandoned) likely connected the three petroleum storage and distribution facilities in the vicinity of the former MGP to a common dock extending from the Sesko Property.

Response: The HRS documentation record at promulgation has been revised to clarify the location of the underground fuel pipeline.

Page 30, 2nd paragraph, 5th and 6th sentences

Comment: Cascade requested that the HRS documentation record at proposal be revised to distinguish the number and contents of the ASTs associated with the former Bremerton MGP. Cascade asserted that the former ASTs included 6 petroleum ASTs and 11 gas holders. The commenter provided the following revised text: "The former MGP included approximately 6 petroleum ASTs, which have been removed. Petroleum products stored at the former MGP may have included gasoline and diesel".

Response: The HRS documentation record at promulgation has been revised to reflect the presence of numerous ASTs at the former Bremerton MGP, but does not include the specific types of ASTs.

Page 30, 2nd paragraph, second to last sentence

Comment: Cascade requested that the referenced sentence in the HRS documentation record at proposal be revised. The commenters provided the following revised text:

Although petroleum products and heavy metals may have been released to subsurface soils, and may be migrating through ground water to surface water, it is clear that Source 1 was releasing hazardous substances to Port Washington Narrows before completion of the removal action.

Response: The HRS documentation record at promulgation has not been revised to include commenters' suggested text, which suggests that the removal action was sufficient to remediate the contamination at the Site. Further discussion of the removal action is addressed in sections 3.5, Consideration of Removal Action, 3.8.1, Likelihood of Release – Effect of Removal and 3.9.2, Waste Characteristics – Effect of Removal, of this support document.

Page 32, section 4.1.3.2.2

Comment: Cascade requested that the hazardous waste quantity factor value in the HRS documentation record at proposal be revised.

Response: The hazardous waste quantity factor value was correctly evaluated in the HRS documentation record at proposal. Please see section 3.9, Waste Characteristics, of this support document.

Page 33, 2nd paragraph

Comment: Cascade requested that the referenced sentence in the HRS documentation record at proposal be revised to reflect that there are no data confirming an impact to the food chain or to tribal fisheries. The commenter provided the following text: "However, there are no data confirming that an impact to the food chain or to tribal or other fisheries has occurred".

Response: The HRS documentation record at proposal correctly evaluated the area of actual contamination and the human food chain threat. For further discussion of the site targets, please see section 3.10, Targets, of this support document.

Page 35, section 4.1.3.3.2.3

Comment: Cascade requested that language be added to the referenced section of the HRS documentation record at proposal that clarifies the zone of actual contamination. The commenter provided the following additional text to be added to the end of the first paragraph of this section:

However, the zone of contamination has not been shown to extend beyond the immediate vicinity of Source 1. Sediment samples within 69-85 feet of the discharge point of Source 1 did not contain detectable carcinogenic PAH contamination during EPA's sampling activities, and were designated as background samples (see page 18 and Table 3). There is no indication contamination attributable to Source 1 has impacted water quality or fisheries in other portions of the 15-mile TDL, and there is no evidence contamination attributable to Source 1 has impacted fish, shellfish, or use of seafood by humans".

Response: The HRS documentation record at proposal correctly evaluated the area (or zone) of actual contamination. The lack of data does not demonstrate that no risk exists. Sampling performed was not meant to

demonstrate extent of contamination. For further discussion of targets, please see section 3.10, Targets, of this support document.

The following comments submitted by Cascade are regarding the NPL narrative.

Site Location

Comment: Cascade stated the following regarding the property boundaries:

The “Site Location” portion of the NPL Site Narrative incorrectly states the Site is approximately 3.5 acres in size. Based on existing data, the upland portion of the Site is about 1.3 acres (i.e., the overall size of the Former Bremerton Gasworks Property) and the sediment portion of the Site is about 1.5 acres (i.e., the sediment area extending from the Former Gasworks Property to the outer harbor line). The total Site area is about 2.8 acres. We suggest revising the second sentence of this section to state: The site is 2.8 acres or less in size and is located approximately 1½ miles from downtown Bremerton.

Response: The NPL Site narrative has been revised at promulgation to accurately describe the Site location.

Site History

Comment: Cascade requested changes in the Site history and stated:

The “Site History” portion of the NPL Site Narrative is not accurate. The former MGP produced gas using the carbureted water gas process between approximately 1930 to the mid-1950s. Between the mid-1950s and 1963, the former MGP produced gas by blending propane and air. There is no evidence the former MGP was used for petroleum storage between 1963 and 1985, although several petroleum storage and distribution facilities were located adjacent to the former MGP and were in operation during this time. All aboveground structures associated with the former MGP were removed between 1963 and 1970. We suggest revising this section to state:

The former Bremerton MGP produced gas using the carbureted water gas method between approximately 1930 to the mid-1950s. Between the mid-1950s and 1963, the former MGP produced gas by blending propane and air. All aboveground structures associated with the former MGP were removed between 1963 and 1970. The majority of the former MGP property is currently vacant and unused, although surrounding properties are used for commercial and industrial purposes.

Response: The NPL Site narrative has been revised at promulgation to more fully describe the site history.

Site Contamination

Comment: Cascade requested changes in describing the Site contaminants in the Site narrative and stated:

The description of “coal gas tars” is inaccurate and misleading. Although coal tar is commonly used as a generic term to describe the tars resulting from various MGP manufacturing processes, the composition of those tars varies based on the feedstock and process (as noted in Reference 11, p. 229). The process used at the former MGP was carbureted water gas, which, as noted above, did not result in the creation of coal tar. We suggest revising this section of the NPL Site Narrative to state:

Various contaminants have been detected in soils, ground water, and sediments at the site, including tars likely associated with gasification processes used at the former plant. These tars contain volatile aromatics and carcinogenic polyaromatic hydrocarbons. Heavy metals were also found at the site. A pipe that was releasing contaminants likely associated with carbureted water gas tars was present along the beach at the site. Upland soil contamination exists to a depth of approximately 30 feet with contaminant concentrations as high as 2,400 times the EPA Regional Screening Levels (RSLs). Ground water beneath the site is also contaminated. Sediments in the Washington Narrows adjacent to the site contain concentrations of contaminants as high as 70 times the Adverse Effects Levels set forth in the National Oceanic and Atmospheric Administration (NOAA) Screening Quick Reference Table.

Response: The NPL Site narrative has been revised at promulgation to accurately describe the site contaminants.

Potential Impacts on Surrounding Community/Environment

Comment: Cascade requested changes regarding the site targets and stated:

As noted above, there is no indication contamination at the Site has impacted any threatened or endangered species, fisheries or human use of seafood. A sentence should be added to the end of this section that provides as follows: However, there is no indication contamination at the site has impacted any threatened or endangered species, fisheries, or use of seafood by humans.

Response: The NPL Site narrative has not been revised to incorporate the revised text. The HRS documentation record correctly evaluated the targets for both the human food chain threat and the environmental threat. See section 3.10, Targets, of this support document for further explanation.

These comments result in no change to the HRS score and no change in the decision to place the Site on the NPL.

4. Conclusion

The original HRS score for this site was 50.00. Based on the above responses to comments, the site score remains unchanged. The final scores for the Bremerton Gasworks site are:

Ground Water	Not Scored
Surface Water	100.00
Soil Exposure	Not Scored
Air	Not Scored
HRS Site Score	50.00